

Water Resources Report Number 51
MISSOURI STATE WATER PLAN SERIES
VOLUME VII

A Summary of Missouri Water Laws



MISSOURI DEPARTMENT OF NATURAL RESOURCES
Division of Geology and Land Survey

COVER:

Greer Spring, south of Winona in Oregon County, is considered one of the most beautiful places in Missouri. On average, the spring flows 187 million gallons of water each day. Photo by Jim Vandike.

Missouri State Water Plan Series Volume VII

A Summary of Missouri Water Laws

SALUS POPULI SUPREMA LEX ESTO

"Let the welfare of the people be the supreme law."

--StateMotto

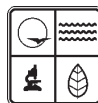
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2000



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This volume contains many citations from actual case law. In regard to the case law sections, citations are given in the legal style, that is, the name of the case, in italics, for example, *Peters v. Shull*, the v. meaning versus, followed by the location of the court's report of the case decision, for example, 379 S.W.2d 837, the first numerals indicating the volume number, the abbreviation indicating (in this instance) the *Southwest Reporter, Second Edition*, and the last numerals indicating the page number where the report begins. Following the citation, there is a report of what the case dealt with and the holding of the court. Usually, the first few words consist of our introduction, such as, "the court determined" or "the case involved" or words to that effect, followed by wording taken directly from the published court report, usually without quotation marks. The wording of the court report may not be grammatical, may omit words of lesser importance, or may even be difficult to understand. The wording of the court report may include other wording, taken from a precedent-setting case. The compilers have made every effort to present a faithful summation of the court report to the greatest extent possible.

Library of Congress Catalog Card Number: 00-41562
Missouri Classification No. MO/NR. Ge 9:51

Gaffney, Richard, and Hays, Charles, 2000, ***Missouri State Water Plan Series Volume VII, A Summary of Missouri Water Laws***, Missouri Department of Natural Resources' Division of Geology and Land Survey, Water Resources Report No. 51, 292 p., 23 figs., 6 app.

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PREFACE

MISSOURI STATE WATER PLAN TECHNICAL VOLUME SERIES

The Missouri Department of Natural Resources State Water Plan Technical Volume Series is part of a comprehensive state water resource plan. This portion is designed to provide basic scientific and background information on the water resources of the state. The information in these technical volumes will provide a firm foundation for addressing present and future water resource needs and issues. Each volume in the series deals with a specific water resource component.

Volume I

The *Surface Water Resources of Missouri* contains a basin-by-basin assessment of Missouri's surface water resources. It discusses the effects of climate, geology and other factors on the hydrologic characteristics of major lakes, streams and rivers. It also assesses surface-water availability and development in the state.

Volume II

The *Groundwater Resources of Missouri* presents information on the availability and natural quality of groundwater throughout the state. It focuses on Missouri's seven groundwater provinces and includes their geology, hydrogeology, areal extent, general water quality, and potential for contamination.

Aquifer storage estimates are given for each aquifer and county. The report also reviews the different types of water-supply wells in use and how water well construction techniques vary between areas and aquifers.

Volume III

Missouri Water Quality Assessment focuses on the current quality of Missouri surface water and groundwater. The volume looks at chemical, bacteriological and radiological water-quality, and natural and man-induced water-quality changes.

Volume IV

The *Water Use of Missouri* describes how Missouri is presently using its surface-water and groundwater resources. The report covers private and public water supplies, industrial and agricultural water uses, and water use for electrical power production, navigation, recreation, fish and wildlife.

Volume V

Hydrologic Extremes in Missouri: Flood and Drought provides basic information about flood and drought specific to Missouri. A historical perspective is given, as well as information that can be used in planning for hydrologic extremes. It also describes concepts and defines terminology helpful in understanding flood and drought.

Volume VI

Water Resource Sharing - The Realities of Interstate Rivers presents Missouri's views concerning interstate rivers. Because of its location, Missouri can be greatly affected by activities and water policy in the upper basin states of the Missouri and Mississippi river basins. Missouri policy can also affect downstream states on the Mississippi, Arkansas and White rivers. Many serious issues affecting

these rivers have less to do with their physical characteristics than with political, economic and social trends.

Volume VII

A Summary of Missouri Water Laws provides an overview of the laws that affect the protection and use of Missouri's water resources. It supplies reference information about existing doctrines, statutes and case law.

FOREWORD

This publication is intended to serve as a guide to Missouri water laws. It contains detailed information on statutory and case laws. Some cases and statutes are repeated in different sections so that each topic stands alone without extensive re-direction to other topics or chapters.

Previous publications on Missouri water laws were prepared by Theodore E. Lauer in 1964 and 1969. They were updated in 1977 by Peter N. Davis and James Cunningham with assistance from Donald Anderson.

This publication was prepared under the direction of James Hadley Williams, Director of the Missouri Department of Natural Resources' Division of Geology and Land Survey and Steve A. McIntosh, director of the Missouri Department of Natural Resources' Water Resources Program in the Division of Geology and Land Survey. The text was compiled by Richard M. Gaffney, B.A. and M.A., University of Maine, and Charles Hays, B.S., Missouri Western State College and M.A., University of Missouri-Columbia. Both Charles Hays and Richard Gaffney are planners in the Water Resources Program. The History and Overview section was prepared by William J. Bryan,

IV, B.A. and J.D., University of Missouri-Kansas City, and Amy E. Randles, B.A., University of Kansas and J.D., University of Michigan. Bryan serves and Randles served as assistant attorneys general for the Missouri Attorney General's Office, Environmental Protection Division.

While every effort was made to make this publication as thorough as possible in its coverage of Missouri water laws, it does not represent an exhaustive history of all cases and statutes. It does not cover all circumstances or issues, and does not address all water-related legal questions. Courts typically provide only case law guidance on the subjects that are brought before them. The Missouri legislature has not enacted legislation that addresses every aspect of human interaction with water. The reader must be continually aware that laws change, sometimes quickly and radically. Readers are advised to seek the services of an attorney for answers to specific water-related legal questions. Opinions expressed by the compilers and contributors in this publication may not necessarily reflect those of the Missouri Department of Natural Resources or the Missouri Attorney General.

ACKNOWLEDGMENTS

The compilers wish to thank Jack Burns, Service Hydrologist, National Weather Service, St. Louis, for providing information about weather forecast and river forecast offices, and Dean Couch, of the staff of the Oklahoma Water Resources Board, Oklahoma City, for providing information about pertinent recent federal water cases.

Recognition to Dr. Gregory Casey, Assistant Professor of Political Science, University of Missouri, Columbia, for providing information on state and federal legislative and judicial systems.

We express gratitude to Tyronne M. Allen, Director, Missouri Supreme Court Library, and his staff, for assistance in regard to case law of Missouri, and the Library Reference Staff, University of Missouri School of Law, Columbia, for their assistance.

Appreciation also to Sheila Munsell and Terry Rowles, Air Pollution Control Program (APCP), Division of Environmental Quality (DEQ), Missouri Department of Natural Resources, for providing information regarding air pollution control; John Madras and Betty Keehart, Water Pollution Control Program (WPCP), DEQ, DNR, for providing information regarding confined animal feeding operations and watersheds; Stan Cowan, Missouri Department of Health, and Leland Neher, WPCP, DEQ, DNR, for help with water quality sections.

The compilers thank Charles Steve Decker, Past Director, Northeast Missouri Regional Of-

fice, Division of Environmental Quality (DEQ), Missouri Department of Natural Resources (MDNR), Macon, Mo., for early draft review and ideas; Steve McIntosh, Director, Water Resources Program (WRP), Division of Geology and Land Survey (DGLS), MDNR, who managed and reviewed this volume and the other State Water Plan (SWP) assessment publications; Jerry D. Vineyard, Interstate Rivers Director, DGLS, MDNR; James Hadley Williams, State Geologist and Division Director, DGLS, MDNR, and Bruce Netzler, Planning Section Chief, WRP, DGLS, MDNR, for their reviews of drafts, and making recommendations.

We are grateful to Edwin Knight, Director of Staff, Water Pollution Control Program, DEQ, MDNR; Jerry Lane, Director of Staff, and Linda McCarty, Planner, Public Drinking Water Program, DEQ, MDNR, and James Alexander, Reservoir and Dam Safety Program Director, DGLS, MDNR, for their technical reviews and comments.

Thanks also to Melissa Manda, Missouri Department of Natural Resources General Counsel, for her advice, and to Karen Massey and Kathy Hale, then MDNR legislative liaisons, for information on the status of bills before the Missouri General Assembly.

Appreciation is expressed to H. Dwight Weaver and Susan C. Dunn, Publications Section, DGLS, MDNR, for editorial review, graphics assistance, and publication arrangements.

INTRODUCTION

Missouri law has its roots in American, English, French, and Spanish common law and has been influenced by the Napoleonic Code (French Law) and the Codex of Justinian (Roman Law).¹ It has developed over time, through statutes (legislation) and cases (court decisions), both serving to guide as well as respond to issues. Statutory and case law serve a dual function in that they both grant and limit power. The U.S. Constitution and the Missouri Constitution are flexible, dynamic documents that continue to evolve to address the needs of society through legislated statutes, judicial case laws, custom and usage, and the formal amendment process.²

The federal and state constitutions have three main objectives: to establish a framework for government; to outline the powers of the government; and to limit the powers of the government in order to preserve certain individual rights.³ The federal and state governments are divided into three main bodies: the legislature, who enacts laws; the executive branch, who enforces the laws; and the courts, who interpret the laws. Under a democratic form of government, all power and authority stems from the people.⁴ The nature of law is to balance and fulfill the rights of the individual⁵ with the needs of society. President Warren Harding made the point well. "Laws," he said, "represent restrictions upon individual liberty, and in these very restrictions make liberty more secure. For the common good, the individual surrenders something of his privilege to do as he pleases, and so organized society is possible."

The Missouri General Assembly (state legislature) is composed of two houses. The "upper" house, Senate, is composed of 34 members, and the "lower" house, the House of Representatives, has 163 members. All state legislators are elected by a popular vote of the state's citizens. State representatives serve a two-year term and state senators serve a four-year term.⁶ The General Assembly follows a formal set of parliamentary rules governing enactment of statutes. A bill (proposed law) becomes an act after it is approved by both houses of the legislature and then a statute (law) after approval by the governor.⁷

¹ Dewsnap and Jensen, *A Summary-Digest of State Water Laws*, pp. 3, 64, 352.

² Shapiro and Tresolini, *American Constitutional Law*, p. 6.

³ Shapiro and Tresolini, pp. 8-9.

⁴ Constitution of the United States, Preamble and Amend. 10; and the Constitution of Missouri, Art. I, §§ 1 through 4.

⁵ Declaration of Independence, ¶¶ 2, 7, and 32.

⁶ Constitution of Missouri, Art. III, §§ 2 and 5.

⁷ The Missouri General Assembly can override a governor's veto of a bill by two-thirds vote, as provided in the Constitution of Missouri, Art. III, § 32.

⁸ Judicial review is the re-examination of the proceedings of a lower court with respect, in particular, to points of law and the path of reasoning the lower court followed in reaching its decision in a specific case.

⁹ Ahrens, S.N., ed., *Official Manual State of Missouri, 1995-1996*, Rebecca McDowell Cook, Secretary of State, Jefferson City, Mo., p. 264.

¹⁰ Ahrens, ed., p. 192.

¹¹ The Executive Branch of government, i.e., the Governor (state) and President (nation), enforce the laws of the state and nation, respectively.

¹² 10th Amend. of the Constitution of the United States.

¹³ Haines, *The American Doctrine of Judicial Supremacy*, p. 26.

¹⁴ Common law represents those principles and rules of action that derive their authority solely from usage and custom and typically seeks to right a wrong after it has occurred. See also RSMo. Chapter 1, § 1.010 (adptd. 1939), which cites the formal recognition of English Common Law in Missouri.

The Missouri judiciary (court system) is composed of one Supreme Court, three Courts of Appeal, and 45 Circuit Courts. The Supreme Court consists of seven judges, one of whom serves as Chief Justice. Generally, the Supreme Court hears cases on appeal from a Court of Appeals. The Supreme Court has areas of original jurisdiction and other judicial and administrative duties as specified by the Missouri Constitution. An important aspect of the Supreme Court and the Court of Appeals, is the function of judicial review.⁸ The Missouri Court of Appeals is composed of three districts. The Eastern District in St. Louis consists of fourteen judges, the Western District in Kansas City is composed of eleven, and the Southern District has seven judges. The Southern District Court of Appeals meets in Springfield and Poplar Bluff. The Court of Appeals hears cases on appeal from Circuit Courts. A chief judge is elected, by the respective district member judges, for the Eastern and Southern districts. The chief judge in the Western District serves a two-year term by rotation according to seniority.

Missouri's Circuit Courts are divided into three levels of jurisdiction--circuit, associate and municipal. Article V, Section 15 of the Missouri Constitution requires at least one circuit judge in each judicial circuit. There are 45 judicial circuits in the state.⁹ Missouri's Circuit Courts are the courts of original (or beginning) jurisdiction for civil and criminal cases.¹⁰ The federal court system is similar in composition and function to their Missouri state court system counterparts, as is the U.S. Congress to the Missouri Legislature.

Laws guide an individual's actions in society by defining rights and responsibilities. Laws are created by the Legislature (statutory law) and interpreted by the Judiciary (case law).¹¹ This report addresses five main kinds or sources of laws: legislated law, court-made law, common law, constitutional law, and equity. Legislated law entails codified statutes enacted by a legislative body, either a state legislature or the United States Congress. Statutory law represents acts of a legislature, adopted pursuant to its constitutional authority to protect the health, safety or welfare of the citizens.¹² Court-made law, or case law, encompasses legal determinations, interpretations and judicial review by state and federal courts on a specific subject brought before them in the form of a lawsuit. Case law represents the decisions (or "holdings") of courts, and is based on judicial reasoning, precedent, statutory law, equity or common law. Unlike statutory law, which is based on rules, case law is based on comprehensive principles of justice. It has been noted that "the great bulk of law in this country . . . is found in the form of case-made law. It has been maintained, on a conservative basis, that three-fourths of all law is made by the courts."¹³ Common law,¹⁴ on the other hand, is that body of law based on unwritten principles of reason and common sense and is recognized by the courts as legally valid and binding. Common law could be termed as unwritten rights and responsibilities. Constitutional law, embodied by the federal and state constitutions, represents the written rights of individual citizens and the

duties and powers of the federal and state governments. Equity¹⁵ is the legal concept of justice which is dispensed by the courts on a case-by-case basis.

The linkage between case law and statutes can be tenuous. Surprisingly, most water-related statutes and civil law¹⁶ cases have a limited interaction with each other. Typically statutory law and case law interact only when a case is brought before a court to declare a statute unconstitutional or a statute is passed to reverse a judicial decision. Both, however, are relatively uncommon. More often than not, cases are decided based on common law rather than statutory law. Most often, both statutory and case law speak to certain questions or issues that are brought before the legislature or court, while Constitutional law, common law, and equity speak to broad based principles. Dependent upon the context of the issue, the statute or judicial decision can be either permissive or restrictive in nature. Restrictive laws provide legal boundaries as to what specific actions cannot be performed, and, if the action is performed, then it is in violation of the law. Permissive laws, on the other hand, provide guidance to the legal boundaries as to what actions can be performed and under what conditions. Under permissive laws, actions performed in any manner contrary to the way specified in the law is illegal. Case law, like statutory law, not only reflects social needs but, through the decrees of the courts, is adapted to meet changing conditions as society progresses.¹⁷

Laws can be further identified as either codified (statutory) laws or civil laws. Code laws are acts of Congress and state legislated statutes that are written and compiled. Code law is commonly, but not always, thought of as criminal or penal law, as it is usually enforced by state and federal police agencies, with infractions carrying criminal penalties. Civil laws do not carry criminal penalties for their infraction; relief, however, to the injured party is commonly monetary in nature. Civil law may include court-made law, common law, constitutional law, and equity. Case law dealing with civil matters is usually, but not always, identified by the way the case is cited, e.g. *Person A v. Person B*, while criminal law most often is cited as *State v. Person*. There are exceptions, however, and one should keep in mind the types and kinds of laws.

Not all laws are equal in stature.¹⁸ Over time and through judicial interpretation, a hierarchy of laws has developed. In 1803, in the case of *Marbury v. Madison*, Chief Justice John Marshall of the United States Supreme Court wrote that, where the U.S. Constitution and a state statute were in conflict, ". . . [T]he Constitution, and not such ordinary act, must govern the case to which they both apply." Chief Justice Marshall continued in his reasoning, noting the U.S. Constitution as ". . . the fundamental and paramount law of the nation. . .". The very nature of the Constitution, its articles, amendments, and clauses, establishes it as a higher law. Judicial interpretation of the hierarchy of laws was also addressed in 1920 in the case of *Missouri v. Holland*. In his majority opinion of the U.S. Supreme Court, Justice

¹⁵ Equity is preventive in nature in that it seeks to avert a threatened wrong by way of injunctive relief -Gifis, *Law Dictionary*.

¹⁶ Civil law as specifically distinguished from criminal law.

¹⁷ Haines, p. 37.

¹⁸ Constitution of the United States, Art. VI, & 2

¹⁹ Gregory Casey, Ph.D., Associate Professor of Political Science, University of Missouri-Columbia, 30 December 1997.

²⁰ For purposes of focusing discussion in this report on statutory and case law, executive agreements, executive orders and administrative law (including federal, state, and local regulations, rules, and policies) have been omitted.

²¹ Walker, "Law Making In The United States", pp. 2-15.

²² Except when the higher law is amended to agree with the lower law, when the higher law is adjudged to be unconstitutional, or in instances of certain specified terms and conditions pursuant to a ratified treaty. When conflict involves two laws on the same level, the most recent law prevails as it is seen to represent the current will of the people.—Walker, *op. cit.*

²³ Dewsnap and Jensen, p. 437.

²⁴ Dewsnap and Jensen, p. 447.

²⁵ Dewsnap and Jensen, p. 437.

²⁶ Dewsnap and Jensen, p. 443.

²⁷ Sax, pp. 1-3.

Oliver Wendell Holmes wrote ". . . [T]reaties made under the authority of the United States, along with the Constitution and laws of the United States, made in pursuance thereof, are declared the supreme law of the land." Though not hard and fast, the courts have helped shape a functional hierarchy of laws.¹⁹ This hierarchy of laws,²⁰ in descending order, are: 1) the U.S. Constitution as interpreted by the U.S. Supreme Court; 2) Acts of Congress and treaties ratified and approved pursuant to the U.S. Constitution; 3) State Constitutions as interpreted by state supreme courts; 4) state statutes; 5) common law — law made or recognized by the courts and; 6) local ordinances.²¹ When two laws are in conflict, the higher law prevails.²² (See Figure 1, The Hierarchy of the Law.)

Water law is aimed at defining our use of water resources in a fair and equitable manner so as to serve the best interests of all citizens and needs. It has been, is, and will continue to be in a state of evolution to meet present demands as well as anticipate the future individual and public needs and priorities placed on the water resources. With the passage of time, needs and priorities change, new questions arise, and historical facts are re-evaluated. These factors drive the evolution of water law. Legal restrictions and requirements on how we use and protect our water resources serve to balance individual needs with the needs of society. Public health, public safety, and the economic well-being of the state and its citizens depend on the adequate availability of usable water. The value of our water resources continues to increase in proportion to demand and the recognition of their significance to our quality of life.

Missouri is a riparian water law state. This means that each individual landowner is entitled to make use of the water found on his property. The laws that address riparian rights are therefore restrictive, in that the landowner cannot make unlimited or unrestricted use of that water in any way that he chooses.²³ The right of a private individual to use and manage the water on or beneath his land is a "natural right," which arises from land ownership and coincides with "riparian rights." "Riparian lands," as defined by the courts, include all lands above underground waters and beside surface waters.

The riparian owner is free to use the water flowing across or under²⁴ his land so long as his usage does not interfere with the rights of other riparians.²⁵ To fully grasp the riparian concept, one must understand that the act of merely using water does not in itself constitute the ownership of that water. The limits on permissible usage and what specifically constitutes unreasonable use of water or land are generally the common focus in court cases. To the extent that Missouri courts have addressed water use, they have generally followed the approach that all uses are allowable unless specifically prohibited, restricted, unreasonable, infringe upon the rights of others, markedly decrease the quality or diminish the quantity of water, or conflict with existing treaties, statutes or case law precedents.²⁶ The riparian's right to use the water in the future is not invalidated by disuse.²⁷ (See Figure 2, Land Grant Survey Map, New Madrid, Mo.)

The Hierarchy of the Law

The Constitution of the U.S.A.

Treaties of the U.S.A.

International Law (e.g. Maritime Law)

Decisions of the Supreme Court of the United States

Decisions of the International Court of Justice (World Court)

Decisions of the United States Court of Appeals

Decisions of United States District Courts

Acts of Congress or Statutes of the United States (U.S. Code)

Presidential Executive Orders

Executive Agreements

Other Executive Documents (proclamations, plans, notices, determinations)

Federal Rules and Regulations (CFR)

The Constitution of the State of Missouri

Decisions of the Missouri Supreme Court

Decisions of the Missouri Court of Appeals

Decisions of Missouri Circuit Courts

Statutes of the State of Missouri (R.S.Mo.)

Gubernatorial Executive Orders

State Rules and Regulations (CSR)

Local Government Ordinances or County Commission Orders

Municipal Court Decisions

[Note: This chart is intended as a graphic representation of a legal concept, and as such is representative of relationships. No chart of this nature should be considered infallible and accurate in all instances.]

Figure 1. The Hierarchy of the Law in Missouri.

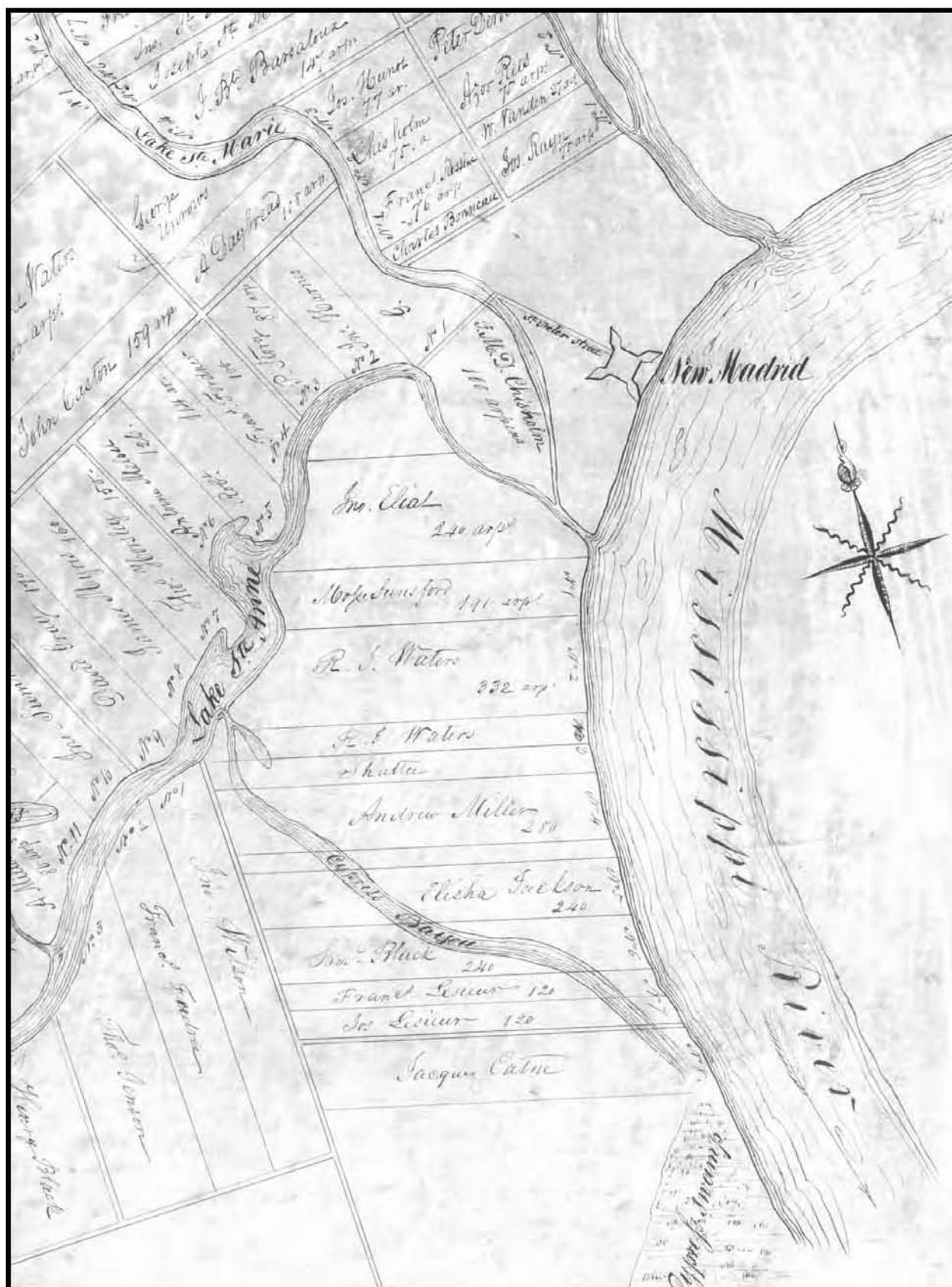


Figure 2. Survey map of early New Madrid, 1804, showing lot lines running to the rivers, making all landowners riparian. Source: Land Survey Program, DGLS.

This philosophy differs from the general concept of prior appropriation water rights of western states. In practice, under prior appropriation law, the individual gains the right to use water based on the date that the person established himself as a water user. These rights attach to a specific source and quantity for that individual. The earlier the date, the more superior the right and higher the priority as opposed to other more recently established users. The distinction, from riparian rights, is that under a prior appropriation philosophy the user is entitled to water, and the "first in time" user has primacy in use. This approach, under conditions of decreased flows or earlier established users utilizing their full shares, sometimes leads to a situation where those who established themselves as water users through recently acquired rights have no water.²⁸ Unlike riparian doctrine, non-use or waste of appropriated water can invalidate future water use.²⁹

Few states, if any, can be said to adhere to pure riparian doctrine or pure prior appropriation doctrine. Most have a blend of aspects of both riparian and prior appropriation laws, to some degree, in order to balance the individual right to use water equitably and fairly.³⁰

Historically, Missouri water law has been concerned mostly with water quantity issues. Being located within the watersheds of two of the largest rivers in the nation, much of the state's past water law dealt with protection from "unwanted" water from the private individual's or landowner's perspective.³¹ Since about the middle of this century, and coinciding with increases in population, a diversification of economic enterprises, and increased environmental awareness, more emphasis has been placed on access to and use of reliable, guaranteed supplies of "wanted" water.³² Increased awareness and resource usage demands have fostered these changes. These changes are reflected in statutes and court cases and are driven by the activities of cities, counties, state agencies, and most notably, individuals.

The major emphasis of this volume is on contemporary water law – water use, water supply, and water quality from both judicial (case law) and legislated (statutory law) perspectives. This document is a review of Missouri water law from an historical inventory approach. For the most part, statutory water law addresses forward-looking, generalized, broad scope issues that have gained widespread attention of the public or represent high priorities of our elected representatives. Statutory laws' focal points tend to be on the needs and well being of society as a whole. This differs from case law, in that much of its emphasis centers on dispute resolution between individuals, and is of a highly detailed and limited nature. Generally, case laws' focal points are on ownership and property, natural water, protection from water, water quality, water supply and water use.

Wherever possible and practicable, the citings of cases are in chronological order, so as to illustrate the evolution of law as it has been interpreted and how it continues to change over time to reflect

²⁸ Dewsnap and Jensen, p. 5.

²⁹ Dewsnap and Jensen, pp. 31-34.

³⁰ Dewsnap and Jensen, pp. 5-6.

³¹ Sax, p. 495.

³² Dewsnap and Jensen, pp. 440-444.

³³ Circuit Court decisions are not listed in this report.

³⁴ Higher courts have original jurisdiction in certain cases as specified in the Constitution of the United States, Art. III, and in the Constitution of Missouri, Art. V.

the demands of society. The appendix contains a listing of court cases in alphabetical order with notes, and a listing of Missouri statutes in numerical order with description. The statutory laws cited in this document are either Missouri statutes or acts of Congress, which apply to Missouri. The cases cited are predominately from Missouri courts, however, some are from the federal courts and the remainder from other state courts. All cases cited are relevant to the topic in that they set a precedent, provide a basis of judicial reasoning for a point of law, or directly affect the state of Missouri or its citizens.

Statutory law citations usually are made referencing the chapter and section of the law as found in the *Revised Statutes of Missouri* (RSMo), published by the General Assembly, for example, "Section 640.435, RSMo," and appears in this report in this fashion. This citation translates to "Chapter 640, Section 435 of the 1994 Revised Statutes of Missouri, 1997 Supplement." Recent legislation, which has not yet been published in the state statutes, is cited as House Bill (H.B.) or Senate Bill (S.B.), with the bill number, and year it was enacted. This type of listing is found in the Recent Legislative Action portion of the Appendix.

Case law citations are not codified the same way as statutes. Case citations provide the names of the litigants, the publication source, and the year that the decision was handed down. It is conventional to abbreviate the name of the publisher, giving the volume number before and the page number after, such as, 289 S.W.2d 583, (1993), which would mean, "Volume 289, *Southwestern Reporter*, Second Series, page 583, decided by the court in the year 1993." Abbreviations for the various state and federal court systems are listed in the Glossary. The most common case reporters or sources for cases cited in this document include Mo. (Missouri), S.W. (Southwestern Reporter), U.S. (United States), F. (Federal Reporter), F. Supp. (Federal Supplement), and S.Ct. (Supreme Court).

This document is strictly limited to discussions relating to Missouri case and statutory water law. It does not cover federal water law (except in areas of sole or preemptive federal constitutional jurisdiction, such as interstate commerce), nor does it address in any depth federal or state rules, regulations, policies, or administrative law, orders, actions or decisions. The listing of federal and other states' court cases is for information about case law that affects Missouri water law, sets judicial precedent, or affects the actual usage of water within this state's boundaries.

The cases listed are the decisions from state and federal appellate judicial systems.³³ As such, they represent, with some exceptions, appeals of lower court rulings.³⁴ Appeals are typically made on points of law on which the lower court based its judgement, and are under contention by one or more of the parties involved in the suit. The appellate court decision then, is typically based on addressing a point of law rather than retrying the original case. Broadly stated, courts of original jurisdiction, usually circuit courts, dispense justice. Appellate courts however, seek to determine whether the original

trial court correctly interpreted and applied the points of law in its reasoning leading to a decision.

The information contained in this volume was compiled in as complete and thorough a manner as possible. Some subjects or topics may have been intentionally or unintentionally omitted. Additionally, some laws may have changed during or since the publication of this work. During development, the researchers found numerous instances where authoritative sources disagreed on the meaning or interpretation of certain statutes and judicial decisions. By their very nature, laws are interpreted differently by different individuals, at different times and under different circumstances.

The reader should also know that some state statutes might be "obscure." As an example, Sections 30.750 *et seq.*, RSMo, covers such topics as Linked Deposits, Farm Assistance and Small Business in the chapter dealing with the Office of the State Treasurer, but it also addresses Water Systems Loans. (See Section 386.20, RSMo, for definitions.) Another example, Chapter 71, RSMo, includes provisions relative to all cities and towns, and addresses water treatment, supply, and contracts. Section 71.287 deals with water usage, and the voluntary reports made to the MDNR, DGLS. It is also understood that the references to court cases are not exhaustive.

Another point, of which the reader should be aware, concerns definitions of commonly used words and phrases. A commonly used definition may not be the same as that used by the legislature or by a court. As an example, the term "surface water" is most often used to refer to water which is on the surface of the land and above the saturated zone of groundwater, or "that part of the total [water] resource that rests upon the Earth's surface, [and] is the water found in rivers, streams, lakes, and reservoirs."³⁵ "Surface water" as defined by state statute is "water in lakes and wetlands, and water in rivers, streams and their tributaries in which water flows for substantial periods of the year."³⁶ "Surface water", as defined by the courts, refers to "that form or class of water derived from falling rain or melting snow or which rises to the surface in springs and is diffused over the surface of the ground while it remains in that state or condition and has not entered a natural water course, and [includes] overflow and floodwaters that become severed from or leave the main current of the natural water course and spread out over the lower ground."³⁷ Unlike the common or legislated definitions, the court definition of "surface water" does not include "watercourses."³⁸

This volume is a part of a larger State Water Planning effort and is one in a series of technical inventory volumes dealing with Missouri's water resources. It is written in a semi-technical context to be as useful as possible to the widest audience. It lends itself to be used separately as a base source of information, a reference work, or in conjunction with other State Water Plan volumes to provide comprehensive, factual information on the status of water law and water issues in Missouri in the late 1990s. Please refer to the Preface for a listing of other volumes in this technical inventory series.

³⁵ Vandike, *Surface Water Resources of Missouri*, p. 3

³⁶ RSMo 640.403

³⁷ *Keyton v. MKT Rail Road*, 224 S.W.2d 616 (1950).

³⁸ See *Benson v. Chicago & Alton R.R. Co.*, 78 Mo. 504 (1883); *Dardenne Realty Co. v. Abeken*, 106 S.W.2d 966 (1973); *Dudley Special Road Dist. v. Harrison*, 517 S.W.2d 170 (1974); *Place v. Union Township*, 66 S.W.2d 584 (Spr. Mo. App. 1933); *Keener v. Sharp*, 95 S.W.2d 648 (Mo. App. 1936); *Keener v. Sharp*, 341 Mo. 1192, 111 S.W.2d 118 (1937); *Prichard v. Hink*, 574 S.W.2d 321 (1978); *Roberts v. Hocker*, 610 S.W.2d 321 (1980); *Schifferdecker v. Willis*, 621 S.W.2d 65 (1981); and *Haith v. County of Atchison*, 793 S.W.2d 151 (Mo. App. 1990).

HISTORY AND OVERVIEW

Understanding Missouri's water resources must begin, by necessity, with a discussion of the legal principles governing the acquisition, use, disposal, diversion and quality of water. In order to understand some of the legal principles discussed below, it is best to have a working knowledge of the historic development of water law in Missouri. The contrasts between past and present rules help to clarify the latter.

Furthermore, the terms used in other volumes in this state water plan series are sometimes used in a technical, rather than legal, sense. The law has its own specific definitions for such terms as "surface water," "watercourses" and "groundwater;" these special legal definitions should be mastered by the reader before embarking on a study of the following principles. Therefore, this background section will explain some important legal terms and provide some history of Missouri law governing water resources as a precursor to the following sections on Watercourses, Groundwater, Protection From Flood Water, and Water Quality.

DEFINITIONS

Water is frequently found in continual motion, whether it is flowing through a defined channel, percolating through soil, collecting in aquifers, traveling along rock fissures underground, emerging through springs, or evaporating from a standing body of water such as a lake or a pond. This makes it difficult to classify the various forms of water and to define the exact boundaries of any particular water body with any precision. Nevertheless, Missouri courts have attempted to distinguish between certain types of waters in order to define the competing rights of individuals, businesses and public entities to consume, divert, dispose of or otherwise use water for their purposes.

Groundwater as a whole is relatively easy to distinguish from water above the ground. However, distinguishing between different types of waters located above the ground can be quite difficult. Typically, Missouri courts have distinguished between so-called "surface

¹ *Happy v. Kenton*, 362 Mo. 1156, 1160, 247 S.W.2d 698, 701 (1952), 18 Mo. L. Rev. 67 (1953).

² *Keyton v. Missouri-Kansas-Texas R.R.*, 224 S.W.2d 616, 622 (Mo. App., K.C. 1949).

³ See *Bradley v. County of Jackson*, 347 S.W.2d 683 (Mo. 1961); and *Bohannon v. Camden Bend Drainage Dist.*, 208 S.W.2d 794, 801 (Mo. Ct. App. 1948).

⁴ *Tackett v. Linnenbrink*, 112 S.W.2d 160, 164 (Mo. App., K.D. 1938).

⁵ See, e.g., *Geisert v. Chicago, R.I. & P. Ry.*, 226 Mo. App. 121, 42 S.W.2d 954 (Mo. App., St. L. 1931); *Happy v. Kenton*, *supra*; cf. *Gibson v. Sharp*, 277 S.W.2d 672 (Mo. App., Spr. 1955).

⁶ See, e.g., *Gibson v. Sharp*, *supra*; *Jones v. Chicago, B. & Q.R.R.*, 343 Mo. 1104, 125 S.W.2d 5 (1939).

⁷ *Goll v. Chicago & A. Ry.*, 271 Mo. 655, 197 S.W. 244 (1917); *Davis, Lawrence O.*, "The Law of Surface Water in Missouri," 24 Mo. L. Rev. 137, 144 (1959); cf. *Shane v. Kansas City, St. J. & C.B.R.R.*, 71 Mo. 237 (1879).

⁸ *Munkers v. Kansas City, St. J. & C.B.R.R.*, 60 Mo. 334 (1875).

⁹ *Higday v. Nicklaus*, 469 S.W.2d 859, 865 (Mo. App., K.C. 1971).

¹⁰ *Higday v. Nicklaus*, 469 S.W.2d 859, 865 (Mo. App., K.C. 1971).

water" and so-called "watercourses." For a body of water to be viewed as a "watercourse," there must be:

. . . a stream usually flowing in a particular direction, though it need not flow continually. It must flow in a definite channel, having a bed, sides, or banks, and usually discharge itself into some other stream or body of water. It must be something more than a mere surface drainage over the entire face of a tract of land, occasioned by unusual freshets or other extraordinary causes. It does not include the water flowing in the hollows or ravines in land, which is the mere surface water from rain or melting snow, and is discharged through them from a higher to a lower level, but which at other times are destitute of water. Such hollows or ravines are not in a legal contemplation water courses.¹

By contrast, "surface water" is:

. . . that form or class of water derived from falling rain or melting snow or which rises to the surface in springs and is diffused over the surface of the ground while it remains in that state or condition and has not entered a natural water course.²

Lakes and reservoirs are surface waters to which riparian rights attach.³

Just where "surface water" ends and "watercourse" begins may be difficult to determine exactly.⁴ For example, artificial drainage ditches are sometimes treated as natural "watercourses," and sometimes as mere "surface water."⁵ It is also often difficult to distinguish between bogs which collect surface drainage in wet seasons, which are treated as surface water, and sloughs in which waters become separated from their normal stream channels during flood stages but are guided back into the main channel of the stream, which are treated as a part of the watercourse.⁶ Special treatment is given to "floodwaters" in Missouri, or waters that extend beyond the normal channel of a watercourse but remain connected with the main channel and remain within a broader, yet still definite, stream. The portions of these waters that extend outside of the normal channel are treated as "surface waters" rather than "watercourses" in Missouri (unless they become separated from the main channel and return to the main channel as described above). This is contrary to many other states.⁷ Ultimately, whether a particular waterway is "mere surface water" or a watercourse is an issue of fact to be found by the jury under proper instructions.⁸

Similarly, there are different classes of groundwater. "Percolating groundwater" seeps, oozes, filters, and otherwise circulates through the interstices of subsurface strata without a definite channel, or in a course that is not discoverable from surface indications without excavation for that purpose.⁹ By contrast, "underground streams" flow in a fixed and defined channel or in a direction that is reasonably ascertainable.¹⁰ There is a legal presumption that

groundwaters are percolating, but this is rebuttable by evidence establishing the existence of an underground stream.¹¹

The legal definitions of these terms may be different from scientific definitions, and are more precise than the definitions of such terms used in everyday communication. Often, in common speech, all waters above the ground are referred to as "surface waters," and all waters below the surface of the ground are referred to as "groundwater." One must be careful to use the correct terminology when speaking in a legal sense, for the rights of individuals and others to divert, consume, otherwise use, dispose of, or pollute various types of waters may depend on it.

¹¹ *Higday v. Nicklaus*, 469 S.W.2d 859, 865 (Mo. App., K.C. 1971).

¹² See, e.g. *City of St. Louis v. Gurno*, 12 Mo. 414 (1849); *Laumier v. Francis*, 23 Mo. 181 (1856).

HISTORICAL OVERVIEW

As will become apparent in the sections that follow, a significant portion of the law on water rights focuses not on the acquisition of rights to consume or otherwise use water, but rather on the right to repel or otherwise control water flow so as to prevent damage to one's property and preserve or develop its suitability for particular uses. Many of the cases interpreting these rights involve either disputes over the right to use or consume water in watercourses, on the one hand, or disputes over the right to repel, control, discharge or otherwise dispose of surface waters, on the other hand. The cases governing use and consumption of water in watercourses is discussed in more detail in the sections on Surface Water and Groundwater. As explained in those sections, use of surface water and groundwater is governed by the "reasonable use doctrine."

The discussion in this section is devoted to providing a background on the control and disposal of surface water. The rule governing such control today is referred to as the "rule of reasonableness," which has some similarities to the "reasonable use doctrine" governing use and consumption of water, but which is distinct from that rule. The "rule of reasonableness" contrasts with the two other rules that previously governed control of surface water in Missouri - these are the "civil law rule," which espouses a "natural flow" theory, and the "common enemy rule."

The "civil law rule" was briefly followed in Missouri.¹² This rule is perhaps best stated as follows:

Where two fields adjoin, and one is lower than the other, the lower must necessarily be subject to all the natural flow of water from the upper one. The inconvenience arises from its position . . . Hence the owner of the lower ground has no right to erect embankments whereby the natural flow of the water from the upper ground shall be stopped; nor has the owner of the upper ground a right to make any excavations or drains by which the flow of water is directed from its natural channel and a new channel made on the lower ground; nor can he

¹³ *Martin v. Riddle*, 26 Pa. 415, 416 (1848).

¹⁴ *Mehorney v. Foster*, 132 Mo. App. 229, 111 S.W. 882 (Mo. Ct. App. 1908); *Walther v. City of Cape Girardeau*, 166 Mo. App. 467, 149 S.W. 36 (Mo. Ct. App. 1912); *Goll v. Chicago A. Ry.*, 271 Mo. 655, 197 S.W. 244 (1917).

¹⁵ See, e.g., *Farrar v. Shuss*, 221 Mo. App. 472, 282 S.W. 512 (Mo. Ct. App. 1926).

collect into one channel waters usually flowing off into his neighbor's field by several channels, and thus increase the wash upon the lower fields.¹³

This rule generally imposed liability on landowners who interrupted the natural flow of waters and thereby harmed their neighbors.

Another rule governing control of surface water that was previously followed in Missouri is the so-called "common enemy rule," which was adopted in *Abbott v. Kansas City, St. J. & C.B.R.R.*, 83 Mo. 271 (1884). This was the predominant rule enforced by the Missouri courts until the reasonable use rule was adopted in this century. The common enemy rule was based on the assumption that surface water is the enemy of all. The crux of this rule was that every landowner possessed an unlimited and unrestricted legal right to control surface water without regard to the effects of such control on the landowner's neighbors.¹⁴ It was essentially a rule of non-liability, but was modified over time to eliminate some of its harsh effects. The rule did not apply to surface waters impounded for beneficial use.¹⁵

Since Missouri courts have applied a "rule of reasonableness" in determining the limits of one landowner's rights to control surface water flow vis-a-vis others' rights. This approach leaves it up to the court to make a determination upon the facts of each case in accordance with fairness and common sense. Particular applications of the rule of reasonableness are discussed further in the following sections on Watercourses, Groundwater, and Protection from Floodwaters.

In 1998, the following section of law was enacted by House Bill 1161 (as amended) and signed by the Governor.

644.018. In any contested case or judicial proceeding filed after January 1, 1998, involving surface water in any flood prone area, if any defendant has obtained and fully complied with a permit from a local subdivision which has enacted orders or ordinances as required by the Federal Emergency Management Agency as a prerequisite to participation in the National Flood Insurance Program, and which political subdivision has jurisdiction, pursuant to the zoning laws of this state or the laws and regulations of the Federal Emergency Management Agency, over the area in dispute, then the proper permitting and compliance with all conditions of such permitting of such project shall be conclusive proof that the project is a reasonable use and meets any reasonable use test imposed by law or a court.

Since the courts have said that determining "reasonable use" is their prerogative, on a case-by-case basis, it appears that the validity of this statute may be considered by the courts at some future time.

WATERCOURSES

A Missourian who owns land adjacent to a river, stream or other watercourse has a legally protected right to a natural streamflow except as changed by the reasonable uses of other landowners.¹⁶ The right to the natural stream flow has two components. First, the right guarantees a natural quantity of water in the waterway. Second, the right guarantees a natural quality of water in the waterway. This is known as a riparian system, and a Missourian who owns land along a river or stream is called a riparian. A "riparian" is a landowner whose property "abuts," or "touches," a watercourse or a lake or pond.¹⁷ Persons classified as riparians do not own the water flowing through their land but have inherent rights to use the water located in watercourses that are adjacent to their lands.¹⁸ These rights of riparians along a common watercourse are frequently competing, because almost any use will deplete the quantity or degrade the quality of water.

There are different legal doctrines that describe the rights of use associated with watercourses under the riparian system. Missouri follows what is known as the comparative reasonable use rule.¹⁹ This rule gives the riparian landowner the right to make reasonable uses of the natural stream flow. Missouri courts have placed greater emphasis on the "reasonable use" aspect of the rule than they have placed on the "natural flow" aspect of the rule.²⁰ Missouri courts have also held that new users must be accommodated by old users.²¹ Some authorities hold that riparians may only use the water on riparian lands within the same watershed as the water resources.²²

The reasonableness of a particular riparian's use depends on a comparison of that use with the uses being made of the watercourse by other riparians and the impacts on society as a whole.²³ The factors for determining the reasonableness of a particular use in Missouri are:

- (a) the purpose of the use,
- (b) the suitability of the use to the watercourse or lake,
- (c) the economic value of the use,
- (d) the social value of the use,
- (e) the extent and amount of the harm it causes,
- (f) the practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other,
- (g) the practicality of adjusting the quantity of water used by each proprietor,
- (h) the protection of existing values of water uses, lands, in vestments and enterprises, and
- (i) the justice of requiring the user causing the harm to bear the loss.²⁴

The discussion below elaborates on the precise meaning of this rule in particular circumstances.

¹⁶ See *Bollinger v. Henry*, 375 S.W.2d 161, 166 (Mo. 1964).

¹⁷ *Tyler v. Wilkinson*, 24 Fed. Cas. 472, 474 (No. 14,312) (C.C.D.R.I. 1827). See also *City of Springfield v. Mecum*, 320 S.W.2d 742, 746 (Mo. Ct. App. 1959); and *Bonhannon v. Camden Bend Drainage Dist.*, 208 S.W.2d at 801.

¹⁸ *Meyers v. City of St. Louis*, 8 Mo. App. 266 (1880).

¹⁹ See *Higday v. Nickolaus*, 469 S.W.2d 859 (Mo. Ct. App. 1971); *Ripka v. Wansing*, 589 S.W.2d 333 (Mo. Ct. App. 1979).

²⁰ See *Ripka v. Wansing*, 589 S.W.2d 333 (Mo. Ct. App. 1979), adopting approach used in *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964) and *Higday v. Nickolaus*, 469 S.W.2d 859 (Mo. Ct. App. 1971).

²¹ *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964).

²² See T.E. Lauer, *Reflections on Riparianism*, 35 Mo.L.Rev. 1, 5 (1970); See also *Armstrong v. Westroads Dev. Co.*, 380 S.W.2d 529 (Mo. Ct. App. 1964).

²³ *Ripka v. Wansing*, 589 S.W.2d 333 (Mo. Ct. App. 1979).

²⁴ RESTATEMENT (SECOND) OF TORTS, Sections 850, 850A (1979); *Ripka v. Wansing*, 589 S.W.2d 333 (Mo. Ct. App. 1979).

²⁵ See *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964); and *Ripka v. Wansing*, 589 S.W.2d 333 (Mo. Ct. App. 1979).

²⁶ See 10 C.S.R. § 20-7.031.

²⁷ See *Dardenne Realty Company v. Abeken*, 232 Mo. App. 1945, 106 S.W.2d 966 (1937); *Bell Veal v. HBC Development Company*, 279 S.W.2d 545 (Mo. App. 955); *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964).

²⁸ Davis, "The Law of Surface Water in Missouri," 24 Mo. L. Rev. 137, 146, fn. 47 (1959).

²⁹ See, e.g., *Terry v. Heppner*, 59 S.D. 317, 239 N.W. 759 (1931).

³⁰ See, e.g., *Orchard v. Cecil F. White Ranches*, 97 Cal. App. 2d 35, 217 P.2d 143 (1950).

³¹ See, *City of Blue Springs v. Central Development Association*, 831 S.W.2d 655 (Mo. Ct. App. 1992); *Heins Implement Company v. Missouri Highway and Transportation Commission*, 859 S.W.2d 681 (Mo. banc 1993); *Springfield Waterworks Co. v. Jenkins*, 62 Mo. App. (1895).

³² *Higday v. Nickolaus*, 469 S.W.2d 859 (Mo. Ct. App. 1971); and *City of Blue Springs v. Central Development Association*, 831 S.W.2d 655 (Mo. Ct. App. 1992).

³³ *Higday v. Nickolaus*, 469 S.W.2d 859 (Mo. Ct. App. 1971).

³⁴ See *City of Blue Springs v. Central Development Association*, 831 S.W.2d 655 (Mo. Ct. App. 1992).

³⁵ *City of Blue Springs v. Central Development Association*, 831 S.W.2d 655 (Mo. Ct. App. 1992).

Missouri courts have recognized a number of valid riparian uses of watercourses under the comparative reasonable use rule. For example, irrigation, domestic water supply and livestock watering have been expressly recognized as beneficial riparian uses.²⁵ The Department of Natural Resources has promulgated state water quality standards which recognize other beneficial uses of water including recreation, aquatic life and industrial uses.²⁶ The comparative reasonable use rule would recognize these and other "reasonable uses" of water in watercourses. Whether a particular use is reasonable depends on the facts and circumstances of the particular case. The only absolute caveat is that any use that diverts the entire stream flow at the expense of downstream riparians is *per se* unreasonable.²⁷

Missouri courts have never outlined the right to use diffuse surface water.²⁸ Some other states have held that a landowner has an absolute right to appropriate surface water, without regard to effects on individuals who own land downstream, through which the surface water would flow absent such appropriation.²⁹ Other states have held that surface waters may only be "reasonably" appropriated, and that "reasonably" does not mean all that is needed.³⁰ Whether or not Missouri ultimately follows the rule used for appropriation of percolating groundwater and surface watercourses, remains to be seen.

GROUNDWATER

The same rule that applied to watercourses also applies to groundwater use.³¹ The same comparative reasonable use rule applies whether the groundwater is percolating or an underground stream.³² As is the case with watercourses, reasonable use is determined on a case-by-case basis, considering all the relevant facts and circumstances, including the type of water at issue.³³

There are two potential limitations. First, groundwater can be used on the property where the wellhead is located or away from that property. However, use away from the wellhead may be barred if it deprives another riparian of groundwater that is essential to the beneficial use of his land.³⁴ If there is no actual interference with another riparian's land use, groundwater can be diverted and used on land away from the wellhead. This allows municipal water supplies to be developed based on groundwaters.

The second caveat is that a riparian cannot "own" groundwater. Instead, a riparian owns the right to use the groundwater. This means that, unlike mineral or timber rights, groundwater cannot be conveyed from a riparian owner to another user. A riparian landowner can convey the right to use groundwater, however.³⁵ This is significant because it has the potential to limit commercial transactions involving groundwater and to limit a landowner's right to dispose of property. As a practical matter, however, a landowner's ability to convey the right to use groundwater is tantamount to conveying the water itself. A person who obtains the right to use water from a ripar-

ian owner may be limited in the use of that water, however. As scarce water resources continue to become more developed, this is likely to be fertile ground for litigation.

OTHER WAYS TO ACQUIRE WATER RIGHTS

It should be noted that the legal principles discussed above base a person's water rights on his or her ownership of real property through which water flows. However, there are persons, organizations and public entities who do not have any significant amount of water running across or under their property, or who do not even own real property. Therefore, there are alternative means to acquiring water rights in Missouri. This section is devoted to an explanation of the alternative means commonly employed to acquire such water rights.

For public entities, condemning land which adjoins a water resource is often an option.³⁶ Although the extent of power differs as between different classes of cities and between cities and counties, all sorts of political subdivisions and local districts have at least some authority to contract with water suppliers or to purchase water resources through condemnation or otherwise, or to create cisterns, wells or other reservoirs of water, and/or to levy taxes to pay for provision of water to their residents.³⁷ Cities, towns and villages are permitted to charge fees in addition to levying taxes for improvements if they voluntarily make an annual report to the Missouri Department of Natural Resources (Division of Geology and Land Survey) on water consumption in their jurisdictions.³⁸ It should also be noted that private corporations, whether for-profit or not-for-profit, may also be formed to supply water.³⁹

The procedure for forming public water supply districts is set forth in Chapter 247, RSMo 1994 (as amended 1996). Persons wishing to dam the navigable waters of the state in order to create water supplies must follow the procedures outlined in Chapter 236, RSMo, so that the rights of neighboring property owners are protected, and may not do so in a manner that will obstruct the free passage of fish up and down and through watercourses.⁴⁰ Damages may be obtained against persons and corporations that construct booms and thereby create backwater or overflow.⁴¹ The drilling of water wells is also regulated.⁴² Furthermore, it is a misdemeanor to either willfully or maliciously divert, dam up and hold back from its natural course and flow any water supply for domestic or municipal purposes, after the supply has already been taken by another for his or her (or, in the case of a city or corporation, its) use, or to divert any water service or make connection with property of a utility.⁴³

River basin conservancy districts may also be created for purposes conducive to the public health, safety, convenience or general welfare, and when properly constituted may then regulate the use of waters in said basins and may condemn lands and acquire riparian

³⁶ See, e.g., *Blue Springs v. Central Development Association*, 831 S.W.2d 655 (Mo. Ct. App. 1992); *Higday v. Nicklaus*, 469 S.W.2d 859 (Mo. Ct. App. 1971).

³⁷ See, e.g., §§ 71.530, 71.525, 71.540, 71.700, 77.140, 77.150, 77.490, 79.380, 80.090, 79.555, 81.190, 88.633, 88.773, 91.010 *et seq.*, 94.413, 247.050, 247.110, 247.120, 247.240, 250.020, 321.600 RSMo 1994.

³⁸ Section 71.287, RSMo 1994.

³⁹ Sections 355.025, 393.010 *et seq.*, RSMo 1994.

⁴⁰ Chapter 236, RSMo 1994 (as amended 1996); § 252.200, RSMo 1994.

⁴¹ Section 537.410, RSMo 1994.

⁴² See Chapter 256, RSMo 1994 (as amended 1995).

⁴³ See §§ 569.090 and 577.150, RSMo 1994.

⁴⁴ See 257.040, 257.200 to 257.270, RSMo, 1994.

⁴⁵ See §§ 67.880 and 67.885, RSMo 1994.

⁴⁶ See, generally, Ch. 68, RSMo 1994.

⁴⁷ §§ 237.101 to 237.190, RSMo 1994.

⁴⁸ § 237.210, RSMo 1994.

⁴⁹ § 516.010, RSMo 1994.

⁵⁰ See *Myers v. City of St. Louis*, 8 Mo. App. 266 (1880).

⁵¹ *Greisinger v. Klinhardt*, 321 Mo. 186, 9 S.W.2d 978 (1928).

⁵² *Greisinger v. Klinhardt*, 321 Mo. 186, 9 S.W.2d 978 (1928); See also *State ex rel. Citizens Electric Lighting and Power Company v. Longfellow*, 169 Mo. 109, 69 S.W. 374 (1902).

⁵³ See *Annin v. Lake Montowese Development Company*, 759 S.W.2d 240 (Mo. App. 1988).

⁵⁴ See *Annin v. Lake Montowese Development Company*, 759 S.W.2d 240 (Mo. App. 1988).

⁵⁵ *Elder v. Delcour*, 364 Mo. 835, 269 S.W.2d 17 (1954).

⁵⁶ See § 304.013.2, RSMo 1994.

and other rights for such purposes.⁴⁴ Conservation of open space is a permissible purpose for condemning land, at least for some government agencies.⁴⁵

Special rights are also given to certain local port authorities to govern the construction of docks and jetties and to develop waterways, acquire property and otherwise improve both navigable and non-navigable areas.⁴⁶ Also, counties have authority over the use of ferries and the fixation of ferriage rates.⁴⁷ Cities, towns and municipal corporations may lease their wharves to steamboats and other vessels.⁴⁸

Adverse possession may be yet another means of acquiring water rights. When a person without water rights diverts water from a source to which another landowner is legally entitled, and this person does so for a period of ten (10) years in an open, notorious, continuous and adverse manner, that person will acquire the right to continued use of the water.⁴⁹ The converse also may be true. Although the landowner failed to establish a right by adverse possession to drain surface water to a down gradient neighbor, the court appeared to recognize the possibility for such an action in *Senkevich v. Vaughn*, 610 S.W.2d 299 (Mo. Ct. App. 1980).

RECREATIONAL USE AND PUBLIC RIGHTS

In addition to having the right to use the natural stream flow consumptively, in Missouri a riparian is guaranteed the right to access and the right to use the surface of the waterway.⁵⁰ In addition, the right to use the surface of the waterway is not restricted to the surface of the water adjacent to the riparian's real estate. Instead, the riparian has the right to use the surface of the entire watercourse.⁵¹ The riparian's rights in this respect, however, are subject to the public's dominant right of navigation.⁵² The rights of surface access and use do not necessarily guarantee a particular water level, at least in the case of a man-made reservoir.⁵³ Nor can a riparian landowner require the owner of the dam impounding the reservoir to make needed repairs or maintain a particular reservoir level.⁵⁴ There may be a right to a particular river level or instream flow under the natural stream flow theory, although it has never been articulated by a Missouri court.

The public right to navigation extends to recreational boating in Missouri. All persons have a right to navigate any river or stream that has a sufficient flow to float a recreational boat like a canoe.⁵⁵ This "recreational servitude" does not extend to the operation of off-road vehicles within rivers and streams in Missouri.⁵⁶ Missouri's recreational servitude is strictly limited to boating and related activities like fishing and swimming. Even these preferred uses are limited by the water safety provisions found in Chapter 306, RSMo.

The public rights recognized by the recreational servitude in Missouri are consistent with the Missouri Organic Act of 1820. The Organic Act was the legislation by Congress that paved the way for

Missouri's admission into the Union. The Organic Act provided that "[t]he River Mississippi, and the navigable rivers and waters leading to the same, shall be common highways, and forever free. . . ." ⁵⁷

Public Trust Doctrine

An important federal doctrine known as the public trust also applies in Missouri. The public trust doctrine maintains that the state holds certain lands and waters (and perhaps other valuable resources) as trustees for the good of the people. Although only one Missouri case has acknowledged the public trust, it is a common thread connecting all of Missouri's strong conservation and environmental laws.⁵⁸

These public rights can interfere with and overcome private riparian rights. For example, even though a riparian can construct a dock in an adjacent river or stream, the dock must not interfere with the public rights of navigation or the recreational servitude. If a private dock interferes with these public rights, it is subject to injunction as a nuisance.⁵⁹

The cornerstone of the riparian system is natural flow. Accordingly, a man-made waterway does not vest any riparian rights in an adjacent landowner.⁶⁰ It may be appropriate in a particular case, however, for a man-made waterway to be treated as a natural stream subject to riparian rights.⁶¹ For example, a ditch that replaces a natural stream may vest rights in adjacent landowners.⁶² In addition, a drainway can be improved so that it comes within the definition of a natural watercourse.⁶³ If an artificial waterway comes within the definition of a natural watercourse, it will be treated as vesting riparian rights in adjacent landowners.

PROTECTION FROM FLOODWATERS

Until recently, floodwaters were legally viewed as the "common enemy to all."⁶⁴ Today, the now familiar comparative reasonable use rule applies to floodwaters in Missouri.⁶⁵ As applied to floodwaters, the comparative reasonable use rule allows the riparian landowner to make reasonable use of his land. In making reasonable use of his land, the landowner can alter the land's drainage and redirect the flow of surface waters. It is permissible for the altered flow of surface waters to cause some harm to neighboring lands, but the comparative reasonable use rule prohibits water control structures that cause unreasonable harm to neighboring lands.⁶⁶ Basically, the rule requires the riparian to be a "good neighbor."

An individual is liable for alterations to surface water drainage that are either intentional and unreasonable or negligent, reckless, or in the course of an abnormally dangerous activity.⁶⁷ When faced with the question of alteration, the court balances the gravity of the harm caused by the alteration to drainage flow against the utility of the alteration. Drainage activities that are unreasonable are subject to injunction as a nuisance or trespass.

⁵⁷ 16th Congress, Session I, Chapter 22, March 6, 1820. This is found at 3 (U.S.) *Statutes at Large* 545.

⁵⁸ See *State ex rel. Citizens Electric Lighting and Power Company v. Longfellow*, 169 Mo. 109, 69 S.W. 374 (1902).

⁵⁹ *State ex rel. Citizens Electric Lighting and Power Company v. Longfellow*, 169 Mo. 109, 69 S.W. 374 (1902).

⁶⁰ See *Brill v. Missouri, Kansas and Texas Railway*, 161 Mo. App. 472, 144 S.W. 174 (1912).

⁶¹ See *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964).

⁶² See *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964).

⁶³ See *Happy v. Kenton*, 362 Mo. 1156, 247 S.W.2d 698 (1952); *Croley v. DeWitt*, 431 S.W.2d 657 (Mo. Ct. App. 1968); *Dudley Special Road District v. Harrison*, 517 S.W.2d 170 (Mo. Ct. App. 1974).

⁶⁴ See, e.g. *Darst v. Metropolitan St. Louis Sewer District*, 757 S.W.2d 270 (Mo. Ct. App. 1988).

⁶⁵ *Campbell v. Anderson*, 866 S.W.2d 139 (Mo. Ct. App. 1993).

⁶⁶ *Heins Implement Company v. Missouri Highway and Transportation Commission*, 859 S.W.2d 681 (1983); *Missouri Highway and Transportation Commission v. Rockhill Development Corp.*, 865 S.W.2d 765 (Mo. App. 1993).

⁶⁷ See *Heins Implement Company v. Missouri Highway and Transportation Commission*, 859 S.W.2d 681 (Mo. banc 1993); and *Missouri Highway and Transportation Commission v. Rockhill Development Corp.*, 865 S.W.2d 765 (Mo. App. 1993).

⁶⁸ See, e.g., *Looney v. Hindman*, 649 S.W.2d 207 (Mo. 1983).

⁶⁹ See, e.g., *Concannon v. Hanley Development Corp.*, 769 S.W.2d 183 (Mo. Ct. App. 1989).

⁷⁰ See, e.g., *Hansen v. Gary Naugle Construction Company*, 801 S.W.2d 71 (Mo. 1990).

⁷¹ See §§ 389.660 and 244.010, RSMo, 1994; See also *White v. Wabash Railway*, 240 Mo. App. 344, 207 S.W.2d 505 (1947) and *Young v. Moore*, 241 Mo. App. 436, 236 S.W.2d 740 (1951).

⁷² See *Brown v. H & D Duenne Farms, Inc.*, 799 S.W.2d 621, 628 (Mo. Ct. App. 1990); and *Schulze v. Monsanto Company*, 782 S.W.2d 419 (Mo. Ct. App. 1989).

⁷³ See *Campbell v. Anderson*, 866 S.W.2d 139 (Mo. Ct. App. 1993).

Missouri's recent change from the modified common enemy rule to the comparative reasonable use rule may have profound practical effects. Unfortunately, however, it is too early to determine in any detail what those effects will be. Commentators have suggested that many drainage activities that were prohibited by the modified common enemy rule in Missouri are also prohibited by the comparative reasonable use rule. For example, under the old rule, floodwaters could not be discharged onto neighboring land where it would not have drained naturally.⁶⁸ In addition, the old rule prohibited floodwater from being gathered from an entire parcel and discharged at a single point onto an adjoining parcel.⁶⁹ Finally, drainage improvements could not cause the natural capacity of the drainway to be exceeded without liability to a downstream landowner under the old rule.⁷⁰ All of these instances in which liability was found under the modified common enemy rule also represent cases where a landowner likely would be held liable under the comparative reasonable use rule, depending on the particular facts and circumstances.

There are special rules that allow drainage improvements to exceed the capacity of the receiving stream where railroads and certain agricultural lands are concerned.⁷¹ A particular case where the switch to the comparative reasonable use rule may have significant impacts has to do with the construction and maintenance of levees.

Historically, landowners have been allowed to protect themselves from floods by constructing levees.⁷² Under the new comparative reasonable use rule, however, actions to repel floods that unreasonably interfere with the use of neighboring lands are prohibited.⁷³ Increasing the height of levees in an emergency by sandbagging or adding rock could be construed to violate the comparative reasonable use rule if it unreasonably harms a neighbor. The comparative reasonable use rule also might restrict the construction of new levees and other water control structures. Finally, whether the repair and routine maintenance of levees that were constructed when the modified common enemy rule prevailed is affected by the new rule is a complicated but open legal question. In light of recent challenges to emergency flood control efforts across the country, it appears likely that these questions may be answered in the near future by litigation. Missouri's "levee wars" may be finding their way into the courts.

WATER QUALITY

A number of state agencies are charged by law with protecting the quality of water in Missouri in one way or another, including the Missouri departments of Natural Resources, Health, Agriculture and the Public Service Commission. Local and area-wide agencies also play a role in administering water quality protection laws. Water quality is primarily protected through state statutes that forbid or regulate the conduct of particular activities that are harmful to, or have the potential to harm, the quality of water resources. The various statu-

tory provisions that govern water quality approach the problem from a variety of angles. Some statutes focus on the treatment of waters being diverted into public drinking water sources, while others focus on the quality of water bodies themselves and forbid any activity that would degrade this quality. Still others focus on preventing and controlling specific types of conduct that might cause the addition of pollutants to water bodies without regard to the quality of the affected or potentially affected water body. The state is also authorized, by statute, to administer grants to certain water and sewer systems and is required to gather and disseminate important water quality data in furtherance of its goal of protecting water quality.

Almost all of the surface waters and groundwaters in the state are protected in one way or another through these statutes, but water quality is also protected in the court system by private citizens and the state who may bring nuisance and trespass actions against polluters.⁷⁴ In addition, local governments have the power to protect water quality resources within their boundaries, and many local authorities operate sewer and water systems for their constituents. The discussion below is limited to the state statutes that serve to protect water quality, and some of the court decisions that interpret those statutes.

Public Drinking Water Protection

The Missouri legislature has enacted statutes to protect the quality of water being supplied by public drinking water systems for human consumption in accordance with the federal Safe Drinking Water Act. Missouri's law not only establishes minimum levels of contamination acceptable by DNR regulations in drinking water supplied to the public, but it also makes grant monies available to public drinking water systems for purposes of constructing or improving their systems.⁷⁵

The Missouri Safe Drinking Water Law prohibits all drinking water suppliers from using their sources or dispensing water to the public without first obtaining a written permit of approval from the Department of Natural Resources.⁷⁶ Such suppliers must file certified copies of their plans and surveys of their waterworks, together with a description of the methods of purification and the source from which the supply of water is derived, to the Department of Natural Resources.⁷⁷ Any construction, extension or alteration of a public water system must be in accordance with the Department of Natural Resources' regulations.⁷⁸

Moreover, this law requires owners and operators of public drinking water systems to test their water periodically for lead, copper and other contaminants that may be hazardous to public health.⁷⁹ Public water systems must report the results of their tests to the Department of Natural Resources and notify their users and the public whenever they fail to comply with the regulations established by the Safe Drinking Water Commission.⁸⁰ The Department of Natural Resources also may inspect public water systems, and may take action to enforce the

⁷⁴ *State ex rel. Dresser Industries, Inc. v. Ruddy*, 592 S.W.2d 789 (Mo. banc 1980).

⁷⁵ § 640.140, RSMo 1994; see also §§ 256.280 to 256.360, 640.600 to 640.615, and 644.122, RSMo 1994, and 640.620, RSMo (Supp. 1995).

⁷⁶ § 640.115, RSMo 1994.

⁷⁷ § 640.115, RSMo 1994.

⁷⁸ § 640.115, RSMo 1994.

⁷⁹ § 640.120, RSMo 1994.

⁸⁰ § 640.125, RSMo 1994.

⁸¹ §§ 640.120.5 and 640.130, RSMo 1994.

⁸² § 640.130, RSMo 1994.

⁸³ § 640.120.6, RSMo 1994.

⁸⁴ See *State ex rel. Dresser Industries v. Ruddy*, 592 S.W.2d 789, 793 (Mo. banc 1980).

⁸⁵ See 10 CSR 20-7.031(1) and Tables G and H.

⁸⁶ See 10 CSR 20-7.031(1)(C).

⁸⁷ See 10 CSR 20-7.031(3) to (10) and accompanying Tables.

⁸⁸ See 10 CSR 20-7.031(2).

⁸⁹ See §§ 644.041, 644.051.2 and 644.082, RSMo 1994.

⁹⁰ §§ 644.051.1 and 644.076.1, RSMo 1994.

requirements of the Safe Drinking Water Law.⁸¹ In the event of an emergency that endangers or could be expected to endanger the public health and safety with regard to drinking water supplies, the department can order system owners and operators to immediately take whatever measures the department specifies to lessen the danger.⁸² The department regularly tracks and publishes information about the water quality in each public water system.⁸³

Protection of Waters of the State from Pollutants and Contaminants

Missouri law doesn't merely protect the quality of drinking water. All "waters of the state" are protected under the Missouri Clean Water Law. The Clean Water Commission was created in 1961 and operated as an independent body until the Reorganization Act of 1974 (See RSMo. Section 256.200). Legislation established additional powers and duties of the Commission in 1972 (See RSMo. Section 644.026), and it became part of the Department of Natural Resources in 1974.⁸⁴ Pursuant to the 1972 law, the Clean Water Commission established water quality standards for different classes of bodies of water in the state based upon the uses designated as appropriate by the Commission for each of them.⁸⁵ Uses that may be designed as appropriate for a particular body of water include irrigation, livestock and wildlife watering, recreational fisheries, protection of aquatic life, whole-body-contact recreation, boating and canoeing, drinking water supply, and industrial process and cooling water.⁸⁶ The water quality standards for each class of water body establish the levels of particular pollutants that should not be exceeded for that class, and these maximum levels for each pollutant are referred to as "water quality criteria."⁸⁷ The regulations further prohibit any degradation of the quality of waters as they existed at the time they were promulgated, with a few limited exceptions.⁸⁸

The Clean Water Law establishes a permitting process that gives the Department of Natural Resources an opportunity to ensure that the level of contaminants to be discharged to waters of the state at a particular conveyance, or "point source," will not degrade the quality of the particular body of water receiving the discharge below the water quality standard established for its class. The required construction and operating permits set forth maximum levels of each contaminant to be discharged at a particular discharge point. This is called "effluent limitations" and requires the permittee to test the water at each point of discharge on a periodic basis and submit the results to the department on a form called a Discharge Monitoring Report.⁸⁹ The Clean Water Law makes it illegal for any person to discharge contaminants into waters of the state that pollute the waters, degrade water quality below the standards, or exceed effluent limitations established in a permit.⁹⁰

The Clean Water Law is quite broad in its application because it prevents all kinds of water pollution, and it protects the waters of the state. For example, the Law defines "pollution" broadly enough to

encompass not only the effects of introducing harmful substances into water, but also changes in the level of dissolved oxygen in water, changes in the temperature of water, and changes in other chemical, biological and physical characteristics of water because such changes can degrade the quality of water and limit its beneficial uses.⁹¹ The law prohibits not only pollution of surface water bodies, such as lakes and rivers and their tributaries, but also subsurface water.⁹² Intermittent streams and other bodies of water that are dry for part of the year also are covered.⁹³

The effluent limitations in any given discharge permit issued under the Clean Water Law will set forth, by specific contaminant, the maximum amount and/or concentration of the contaminant that may be discharged into the receiving body of water in a given time period; these parameters are specific to the type of facility that is discharging.⁹⁴ Certain types of facilities are required to be "no discharge" facilities, which means that they are designed to and actually prevent any discharges of contaminants or pollutants to waters of the state except in the event of certain extraordinary rainfall events.⁹⁵ The Department of Natural Resources has established separate sets of regulations to govern storm water discharges, heat pump operations, mineral resource injection/production wells, concentrated animal feeding operations, disposal of wastewater in residential subdivisions, and other types of facilities.⁹⁶

Alternatives to the normal permitting process are available for certain types of discharges. For example, in certain areas, sewer systems will gather and channel any pollutants or contaminants placed within their drainage area into publicly owned treatment works ("POTWs"). While the law requires the POTW to obtain a permit, the persons "discharging" pollutants or contaminants into the POTW system do not need a permit.⁹⁷ Rather, persons discharging non-domestic wastewater into the POTW system must satisfy requirements established by the POTW authority.⁹⁸ Typically, the POTW prohibits its users from dumping certain types or quantities of contaminants into the system, which would cause a bypass around the system or would interfere with the POTW's ability to comply with its effluent limitations, because the POTW authority is ultimately responsible for ensuring that its system complies with the terms and conditions of the POTW's permit.⁹⁹

Another example of an alternative to the traditional permitting process is the so-called "general" permit. For certain types of facilities discharging to certain receiving streams, the permitting process is simplified because these facilities have discharge characteristics so similar to one another that the Department of Natural Resources has been able to develop a standard set of permit terms and conditions for them.¹⁰⁰

Finally, it should be noted that other state agencies also have authority over sewage treatment facilities that impact water quality. The Department of Health regulates small on-site sewage disposal systems.¹⁰¹ The Public Service Commission requires sewer utilities to

⁹¹ § 644.016(9), RSMo 1994; *State ex rel. Ashcroft v. Union Electric Co.*, 559 S.W.2d 216 (Mo. Ct. App. 1977).

⁹² See § 644.016(17), RSMo 1994.

⁹³ *Hammack v. Missouri Clean Water Comm'n*, 659 S.W.2d 595 (Mo. Ct. App. 1983).

⁹⁴ 10 CSR 20-7.015.

⁹⁵ 10 CSR 20-6.015.

⁹⁶ See 10 CSR 20-6.010 to 10 CSR 20-6.300; *Scheble v. Missouri Clean Water Comm'n*, 736 S.W.2d 541 (Mo. Ct. App. 1987).

⁹⁷ 10 CSR 20-6.010(1)(B)(2).

⁹⁸ 10 CSR 20-6.100(1).

⁹⁹ 10 CSR 20-6.100(4).

¹⁰⁰ 10 CSR 20-6.010(13).

¹⁰¹ § 701.029 et seq., RSMo 1994; 10 CSR 20-3.060.

¹⁰² § 386.250, RSMo (Supp. 1996); 4 CSR 240-60.020.

¹⁰³ See §§ 444.760 to 444.789, RSMo 1994.

¹⁰⁴ § 444.856, RSMo 1994.

¹⁰⁵ See §§ 259.070 and 259.080, RSMo 1994.

¹⁰⁶ See § 236.465, RSMo 1994.

¹⁰⁷ §§ 256.605 to 256.640, RSMo 1994; see also § 577.155, RSMo 1994 (governing use of waste disposal wells).

¹⁰⁸ See §§ 640.700 to 640.758, RSMo (Supp. 1996).

¹⁰⁹ § 640.725, RSMo (Supp. 1996).

¹¹⁰ § 640.730, RSMo (Supp. 1996).

¹¹¹ §§ 260.200 to 260.255, and §§ 260.350 to 260.434, RSMo 1994 (and Supp. 1995).

¹¹² §§ 281.005 *et seq.*, RSMo 1994 (as amended 1995).

meet certain engineering and maintenance requirements to ensure compliance with the state's water quality standards.¹⁰²

Water Quality Protection Through Regulation of Specific Activities

Certain types of activities that tend to impact water quality are also regulated pursuant to statutes tailored particularly to them, often by special boards and commissions that work in coordination with another state agency. For example, in-stream sand and gravel operators must obtain permits from the Land Reclamation Commission and conduct their excavating activities in accordance with the Land Reclamation Act.¹⁰³ Surface coal mine operators must also obtain permits and must preserve the hydrologic balance of the mining area to the extent possible during their operations.¹⁰⁴ Oil and gas well drilling operators must similarly obtain a permit from the state geologist and conduct oil and gas production activities in accordance with standards established by the Missouri Oil and Gas Council.¹⁰⁵ Dams constructed to contain industrial water such as tailing, slime and settling ponds must be permitted by the Missouri Dam and Reservoir Safety Council to ensure their structural integrity.¹⁰⁶ Persons who drill water wells or install heat or other pumps or monitoring wells or conduct groundwater or surface water tracing activities are subject to the permitting, registration and examination requirements administered by the Well Installation Board.¹⁰⁷ These activities are overseen by the Department of Natural Resources.

As another example, during the 1996 legislative session, an emergency law was passed to specifically address water quality problems resulting from concentrated animal feeding operations.¹⁰⁸ Among other things, this law requires owners and operators of flush system animal waste wet handling facilities at large concentrated animal feeding operations (CAFO) such as hog mega farms to conduct frequent inspections of their animal waste handling facilities and to have electronic or mechanical shutoff capabilities for their systems.¹⁰⁹ These facilities must construct failsafe containment structures or earthen dams to contain unauthorized animal waste discharges if they are located sufficiently near certain water resources.¹¹⁰ Still other laws, such as the Solid Waste Management Law and the Hazardous Waste Management Law, protect water resources indirectly by requiring that certain harmful wastes be carefully contained and handled so as to limit their impact on the environment and the public safety.¹¹¹ The Department of Natural Resources, the Clean Water Commission and the Hazardous Waste Commission administer these laws. The Missouri Department of Agriculture also plays a role in protecting water quality by registering and restricting the use of pesticides, licensing pesticide dealers and users who have adequate education and training in the application of pesticides, and regulating the storage, transportation and disposal of pesticide containers.¹¹²

Other statutes ban particularly harmful water uses. The Attorney General is charged with enforcing § 304.013, RSMo 1994, for ex-

ample. This statute prohibits, with limited exceptions, any person from operating an off-road vehicle or all-terrain vehicle (ATV) within any stream or river in Missouri. There are similar prohibitions against the intentional defiling of water used for domestic or municipal purposes, the use of wells for waste disposal, the dumping of sewage from boats, and the placement of harmful substances in caves or sub-surface waters.¹¹³

Area-Wide and Statewide Water Quality Monitoring and Protection

Missouri's statutes establish mechanisms for agencies to oversee water quality on a statewide or area-wide basis in addition to focusing on particular systems affecting water quality or on particular water bodies, as described above. For example, in 1989, the Missouri legislature charged the Department of Natural Resources with establishing, developing and maintaining an ongoing statewide surface and groundwater monitoring program. This was done to determine background, or "baseline," water quality data for Missouri's surface and groundwater resources, to detect trends in the character and concentration of contaminants in such water resources, and to identify areas that are highly vulnerable to contamination.¹¹⁴ This law, known as the "Missouri Water Resource Law," also charged the Department of Natural Resources with establishing an inventory of existing surface water and groundwater uses and quantities, and with developing the state water resource plan of which this volume is a part.¹¹⁵ The Clean Water Commission plays a similar role in collecting and disseminating data concerning the water resources of Missouri as related to its social and economic needs.¹¹⁶

Under the Missouri Water Resource Law, the Department of Natural Resources may also establish special water quality protection areas where it finds a contaminant in a public water system or a contaminant in surface or groundwater that exceeds maximum contaminant levels or water quality standards established under the Safe Drinking Water Law or the Clean Water Law and that presents a threat to public health or the environment.¹¹⁷ After defining the boundaries of a special water quality protection area, the Department of Natural Resources is to implement an informational program to help prevent, eliminate, mitigate or minimize the continued introduction of the contaminant(s) into the surface or groundwater within those boundaries.¹¹⁸

Finally, state law also protects water resource quality by permitting the formation of local water, sewer, and soil and water conservation districts that perform a variety of functions to protect water resources. Public water supply districts, sanitary drainage districts and sewer districts may be formed by certain cities, counties and territories crossing city and county lines to make available ample quantities of wholesome quality water to their inhabitants and to treat the sewage produced within their territories.¹¹⁹ Soil and water conservation districts may be formed to, among other things, implement projects

¹¹³ See §§ 577.150, 577.155, 306.250 to 306.290, and 578.215, RSMo, 1994.

¹¹⁴ § 640.409, RSMo 1994.

¹¹⁵ §§ 640.412 and 640.415, RSMo 1994.

¹¹⁶ § 256.200, RSMo 1994.

¹¹⁷ § 640.418, RSMo 1994.

¹¹⁸ §§ 640.418 and 640.420, RSMo 1994.

¹¹⁹ Chapters 247, 248, 249, 250 and 257, RSMo 1994 (as amended 1995, 1996).

¹²⁰ §§ 278.060 *et seq.*, RSMo 1994.

¹²¹ See § 64.975, RSMo 1994.

to protect watersheds and prevent floods.¹²⁰ In addition, after a public vote, a county may designate specified waterways, streams, rivers or other waters of the state as natural streams requiring special protection.¹²¹

The preceeding discussion is intended to alert the reader, in a general fashion, to the myriad ways in which Missouri law protects the quality of Missouri's surface waters and groundwaters. While the Clean Water Law addresses water quality and contamination of all surface waters and subsurface waters of the state in a direct fashion, many other laws preserve the quality of waters of the state indirectly. This is done by controlling activities that would, by their nature, tend to affect water quality, by regulating the quality of drinking water, and by placing special water quality management responsibilities on various state and local agencies.

WATER RIGHTS

LANDOWNER and RIPARIAN RIGHTS

Riparian is a word that comes from the Latin word, *riparius*, meaning river bank.¹ Riparian land touches the bank of a river, stream, pond, or lake, or overlies groundwater. The owner of such land is known as a riparian landowner. The entitlements of riparian ownership are known as riparian rights, and the common law doctrine of riparian water rights is called "Riparian Doctrine."

Usufruct also is a word from Latin, a combination of the words for "use" and "fruit," meaning enjoyment. It refers to the right of using and enjoying the advantages and profits of a thing without owning, altering or damaging its substance.² With reference to Missouri's riparian rights in water, the water is not owned as property, but rather is used, consumed, put to beneficial use³ and enjoyed.

Landowners are often referred to in case law as proprietors, and, if they border a watercourse, riparian owners or abutting owners. In the eyes of the law, a riparian owner is a "person" (one who can buy, sell, or own property).

Corporations, including municipalities, fit this definition and are sometimes legally identified as "artificial persons." An individual, a corporation, or a city is a "person" within the meaning of the law. Riparian and landowner rights are addressed almost entirely in case law. Riparian rights arise by virtue of ownership of real property (land ownership), which underlies or borders watercourses or lies above groundwater. All that is needed to acquire riparian rights is to acquire ownership of riparian land, because riparian rights are attendant to land ownership. The rights, however, are "usufructuary," that is, the right to use the water, rather than ownership of the water itself.⁴ The courts have held that the right to use the water must be exercised in a "reasonable" manner, and therefore, the landowner's right to receive or have available water of a certain quality or quantity must likewise be "reasonable" in expectations.

Through the state's history, as Missouri became more populated and economically diversified, the public interest in water resources began to be represented and asserted, and the rights of individual

¹ Neufeldt, Victoria, Editor in Chief, *Webster's New World Dictionary*, Third College Edition, p. 1158.

² *Webster's New World Dictionary*.

³ *Finley v. Teeter Stone, Inc.*, 251 Md. 428, 248 A.2d 106 (1968), *Higday v. Nickolaus*, 469 S.W.2d 859 (K.C. Ct. App. 1971), *Jones v. Oz-Ark-Val Poultry Co.*, 228 Ark. 76, 306 S.W.2d 111 (1957), *Kansas v. Colorado*, 206 U.S. 46 (1907), *Roberts v. Hocker*, 610 S.W.2d 321 (1980), *Wyoming v. Colorado*, 286 U.S. 494 (1932).

⁴ Dewsnap and Jensen, pp. 28, 35, and 36.

⁵ Dewsnap and Jensen, p. 2

⁶ Dewsnap and Jensen, p. 437.

⁷ Davis, P.N., "Missouri", in Beck, ed., *Waters and Water Rights*, p. 458.

landowners began to change. The landowner's right to use or abuse land or water resources has been tempered by an understanding that the property rights enjoyed by a landowner are not so much a right to his unlimited wishes to do what he pleases with the land, but more as a caretaker of the land (and water) for future generations. Conservation of water resources, and permits to undertake certain projects to use water or divert water now are considered commonplace. It is likely that the public interest will be represented more in the future, and water rights should be considered as following a trend in that direction.⁵

In defining water rights in this state, Missouri courts historically have applied what is called the "riparian doctrine" of water rights.⁶ The "reasonable use" doctrine has been applied within the last half century, with greatest emphasis in the last decade.⁷

Riparian doctrine is the concept of water rights whereby the owner of land along a watercourse is entitled to "reasonable use" of the water in the stream. The riparian doctrine in itself does not convey water rights *per se*. In Missouri, water rights conflicts are dealt with on a case-by-case basis through the courts.

Riparian Rights and the Law

There are no statutory laws that directly address the topic of riparian water rights. The case law governing riparian rights stems from common law. There are many Missouri, federal, and out-of-state cases that address landowner and riparian water rights. There are two early cases, one federal, the other state, which are notably important. The federal case of *Tyler v. Wilkinson*, 4 Mason 397, 24 F. Cas. 472 (1827), established riparian rights in watercourses. The U.S. Supreme Court said, "*prima facie*, every proprietor upon each bank of a river is entitled to the land covered with water in front of his bank, to the middle thread of the river. In virtue of this ownership he has a right to use the water flowing over it in its natural current, without diminution or obstruction, but he has no property in the water itself. Every proprietor may use the water as it flows, according to his pleasure, if the use be not to the prejudice of any other proprietor. There is no difference whether a proprietor be above or below another on the river, no right is acquired or lost by such. No proprietor has a right to throw back water on a proprietor above, or to divert it from a proprietor below, to his injury. Priority of occupancy of the flowing water of a river creates no right, unless the appropriation be for a period, which the law deems a presumptive right. All riparians have equal rights, regardless of the relative quantity of water in the river."

The case of *Tyler v. Wilkinson* effectively established the legal basis for the doctrine of riparian rights in the United States. All landowners whose properties abut a stream have equal right to the stream's natural flow and to the reasonable use of its water. What is reasonable is determined by a court of law by comparing each individual

landowner's use of the water to one another and with the hydrologic characteristics of the stream.⁸

Fourteen years later, the Missouri Supreme Court applied the concept of riparian rights to the watercourses of Missouri. The court, in *Welton v. Martin*, 7 Mo. 309 (1841), clearly and simply outlined the riparian rights of a landowner. The court held, "the owner of the land is entitled to the use of a watercourse which flows across his land."

Right of Access to Water

The right of access is complementary to the right of use, for without right of access the right to use would be severely limited if not completely restricted, particularly so on navigable watercourses.

Meyers v. City of St. Louis, 8 Mo. App. 266 (St. L. App. 1880), addressed the right of access to a watercourse at the frontage of a riparian owner. The court held that "a riparian owner on a navigable stream owns to the water's edge, has the right of access to the river over his land, to make a landing subject to the rights of navigation, and to use the water in its natural flow, which rights can not be wrested from him for the public use without just compensation."

The federal case of *Gibson v. United States*, 166 U.S. 269 (1897), was on a riparian landowner's right of access to a watercourse. "Riparian ownership, on navigable waters, is subject to the obligation to suffer the consequences of an improvement of the navigation, under an act of Congress, passed in the exercise of the dominant right of the government."

Greisinger v. Klinhardt, 321 Mo. 186 (1928), also dealt with right of the riparian to access lakes and streams. In this state court case, the Missouri Supreme Court held that a riparian has the right of access to the entire surface of an artificial watercourse which became a natural watercourse with passage of time. An artificial lake which was created from a navigable stream retains public recreational rights.

The court decided, in *Bradley v. County of Jackson*, 347 S.W.2d 683 (1961), that riparian rights arise from the ownership of land abutting water. "Owners of property," wrote the court, "which abut an artificial lake acquire littoral rights to lake [and lakeshore] use for recreational and domestic purposes. Riparian rights arise from ownership of land abutting water and are incident of such ownership of 'upland' regardless of ownership of submerged lands.⁹ Easements and conveyance of right-of-ways [*sic*] by owners to others, whose purpose is construction of an artificial lake, does not preclude use and enjoyment of the lake by owners whose property abuts water's edge."

Right to Reasonable Use

The Reasonable Use Doctrine in common law is of paramount importance in understanding Missouri water law. The reasonable use rule applies to all classifications of water¹⁰ in Missouri.

⁸ Davis, P.N., *Federal and State Water Quality Regulation and Law in Missouri*, p. 488.

⁹ Ownership of submerged lands is discussed in the section on Boundary and Interstate Waters.

¹⁰ Surface water, ground-water and watercourse classifications of water are discussed in the Overview and in detail in the section on Water Supply.

The importance of usable, accessible water is illustrated by the court's holding in *Smith v. Musgrove*, 32 Mo. App. 241 (1888), where the court held that a lower riparian gained prescriptive rights to use an artificial watercourse, where water had been diverted by the upper riparian from its natural channel so that it no longer ran to the lower landowner's property. In essence, the court was saying that a landowner's legal right to water flowing in a watercourse, even though it was an artificially constructed waterway, could not be denied him by an upper landowner.

The case of *St. Louis Southwestern Ry. v. Mackey*, 95 Ark. 297, 129 S.W. 78 (1910), involved reasonable use of natural flow. Here, the Arkansas court held that any activity of another which causes the diminishment of the natural flow of a stream is an infringement upon the rights of the other riparian owners, who are entitled to a full natural flow. Virtually identical language was used in Arkansas a year later in the case of *Taylor v. Rudy*, 99 Ark. 128, 137 S.W. 574 (1911).

In *City of Cape Girardeau v. Hunze*, 314 Mo. 438, 284 S.W. 471 (1926), the courts considered questions of reasonable use under the riparian rights doctrine. The court held that, "owners of land through which a natural watercourse flows are not absolute by merely being riparian owners, and must endure impurities and pollution which finds its way into the stream from natural wash and drainage of a city situated on its banks upstream and from lands of other upper riparian owners."

In *Harris v. Brooks*, 225 Ark. 436, 283 S.W. 2d 129 (1955), an Arkansas court spoke on reasonable use. The Arkansas court held that, "each riparian owner is entitled to make a reasonable use of surface water [and] in applying the reasonable use theory of stream waters, the determination of reasonable use is largely a matter for discretion of the court, reached after evaluating the conflicting interests of each of the contestants before the court in accordance with the standards that only when a riparian proprietor's use of the water is unreasonable can another who is harmed by it complain. Intentional harm to another cannot be justified as reasonable unless the legal merit or utility of the activity which produces it outweighs the legal seriousness or gravity of the harm."

An important out-of-state case on the topic of reasonable use was *Snively v. Jaber*, 48 Wash. 2d 815, 296 P.2d 1015 (1956). The court ruled that rights or privileges of riparian proprietors on a non-navigable lake with respect to boating, swimming, fishing and other similar activities, are owned in common, and any proprietor or his licensee may use the entire surface of the lake, so long as he does not unreasonably interfere with the exercise of similar rights by other owners.

Bollinger v. Henry, 375 S.W.2d 161 (Mo. 1964), addressed surface waterways, and comparative reasonable use. The right of a riparian owner in the water of a stream, in jurisdictions where the doctrine of riparian rights obtain, include "the right to the flow of the stream in its natural course and in its natural condition in respect to

both volume and purity, except as affected by reasonable use by other proprietors."

That same year, in *Armstrong v. Westroads Development Co.*, 380 S.W. 2d 529 (St.L. Ct. App. 1964), the court held that, "under the riparian doctrine, the right to use water from watercourses and lakes is limited to riparian owners, those owners of land in physical contact with the water."

Public Rights

Non-riparian landowners also have rights to use watercourses. This right of use focuses upon the public's recreational and commercial activities.

Elder v. Delcour, 364 Mo. 835, 269 S.W.2d 17, 263 S.W.2d 221, 241 Mo. App. 839 (MoSC 1954), discussed landowner and public rights in riparian streams, and the right of the public to navigate upon watercourses. The waters of navigable streams are "public highways" and the submerged area of a stream channel which crosses private property may be accessed by the public for purposes of travel by floating or wading, for business or pleasure. The practical interpretation of this court decision is that the public has the right to use a stream, for example floating the stream in a canoe, but does not have the right to use or trespass onto the privately owned land at the banks of the stream. (See Figure 3, A Missouri Float Stream.)

Four years later, the case of *Sneed v. Weber*, 307 S.W.2d 681 (St.L. Mo. App. 1958), cited and enhanced the holding in *Elder*. The court held that the rule to be applied in this state in determining whether or not a body of water is navigable under state jurisdiction is to be found in the case of *Elder v. Delcour*. To be navigable under the Missouri rule, the stream must be capable of floating vessels or boats as are used in the customary modes of travel in pursuit of commerce. A stream is not navigable simply because a small boat may be navigated through a tortuous course. To be navigable, a stream must be navigable in its natural state, unaided by artificial means or devices; waters which may be made floatable only by artificial means are not regarded as navigable or as public highways.



Figure 3. Canoes on a Missouri float stream. The holding in the case of *Elder v. Delcour* resulted in opening of Missouri streams to canoe floating as a summer pastime. Photo by James E. Vandike, DGLS.

¹¹ *Happy v. Kenton*, 247 S.W.2d 698 (1952); *Dudley Special Rd. Dist. v. Harrison*, 517 S.W.2d 170 (1974).

¹² Except Hawaii which has a unique system of water rights, and California which has a blend of riparian and appropriation water rights doctrines—Dewsnup, pp. 12 and 129.

¹³ Sax, pp. 2-3.

Limitations on Rights to Use

The right of usage, by either the riparian landowner or the public, is not totally unrestricted. In the following cases, the courts discuss these limitations.

In the case of *Brill v. Missouri, Kan. & Tex. Ry.*, 144 S.W. 174 (1912), the court determined that riparian rights do not attach to artificial watercourses, but *Bollinger v. Henry*, 375 S.W.2d 161 (1964) clarified the ruling by stating that where an artificial watercourse is substituted for a natural one, it may be treated as a natural watercourse, with respect to riparian rights. A drainway which is improved to meet the definition of a natural watercourse may also be treated as a natural watercourse with respect to riparian rights.¹¹

In *State ex rel. Citizens' Elec. Lighting & Power Co. v. Longfellow*, 169 Mo. 109, 69 S.W. 374 (1902), the court held that a riparian owner may not construct or encroach upon the watercourse so as to impede the public's right of navigation and travel.

The court held, in *Nickey v. St. Louis, M. & So. Ry.*, 135 Mo. App. 661, 116 S.W. 477 (St. L. App. 1909), that the railroad, in construction of a railway bridge, obstructed the flow of a natural watercourse, retarding the flow of water in the creek and causing it to back up and to overflow the lands of the upper riparian owner, and is liable for damages suffered by the upper landowner.

In *Stough v. Steelville Electric Light & Power Co.*, 206 Mo. App. 85, 226 S.W. 295 (1920), the court held that a riparian land owner may not divert water from a watercourse unless he returns it to the watercourse before it reaches the land of the lower riparian owner.

The court held, in *Pernell v. City of Henderson*, 220 N.C. 79, 16 S.E.2d 449 (1941), that cities do not have the right to appropriate surface water for use by non-riparian owners if such appropriation of water would infringe on the rights of riparian owners, unless those owners are compensated.

In *Belveal v. H.B.C. Development Co.*, 279 S.W.2d 545 (K.C. Ct. App. 1955), the court ruled that in the development or improvement of his land, a landowner may not destroy a spring which furnishes water to a natural watercourse which in turn would deprive lower riparian owners of the surface water flow in the stream.

Prior Appropriation

To understand limitations on rights to use water, one must know that the concept of riparian rights is not observed and used in every state. West of Missouri, most of the states¹² adhere to a concept known as the prior appropriation doctrine. West of the 100th meridian of longitude, there is an arid region once commonly known as "the Great American Desert," where rainfall is deficient for most types of beneficial uses and the application of riparian rights proved unsatisfactory. Irrigation of crops is extensively used in this area. The prior appropriation doctrine, in which the first user has first right to subsequent use ("first in time, first in right"), became a legal principle in the water-short Great Plains and Great Basin states.¹³

Using this concept of water law, the state governments allocate water rights based on applications from users, and in time of drought, there may not be enough water to go around, so those with the earliest allocations (prior appropriations) get theirs first. Latecomers must do without, when supplies are short.¹⁴

Even in prior appropriation states, riparian rights sometimes are asserted and are upheld by the courts in contravention of statutory water appropriation law. In the series of cases, beginning with *Franco-American Charolaise, Ltd. v. Oklahoma Water Resources Board and City of Ada*, 646 P.2d 620 (1982), followed by 855 P.2d 568 (1990) [rehearings denied and opinion reissued, 1993], the Oklahoma Supreme Court stated that the modified common-law riparian right to reasonable use of streams has been the controlling norm of water law in Oklahoma since its statehood, and that the statutory right to appropriate stream water coexists with, but does not pre-empt or abrogate riparian owner's common-law rights. "Since 1897 both the common law and the statutes have operated in Oklahoma to confer riparian and appropriative rights. Though these rights have coexisted in the state for almost 100 years, they are theoretically irreconcilable."¹⁵

This case serves to illustrate the problems and shortcomings of both prior appropriation and riparian rights doctrines to balance the rights of the individual with the needs of society. With the ever-increasing population and demands placed on our limited water resources, cases like this will probably arise with greater frequency.

TRANSFERENCE OF WATER RIGHTS

As has been discussed above, Missouri is a riparian state and, as such, water cannot be and is not "owned" like other forms of real and personal property. The courts of Missouri have not addressed the transference of riparian rights to non-riparians.¹⁶

Transference of individual water rights in Missouri accompanies the transfer of title to riparian land. Riparian water use and land ownership are addressed in case law, with rights pertaining to water use being linked, among other things, to land ownership, comparative reasonableness as to how the water is used, and federal navigational servitude. Groundwater can be collected and sold by the individual riparian landowner and municipalities, provided that it does not interfere with the riparian rights of other landowners.¹⁷ Municipal utility water supply diversion to offsite use by the utility's customers is legally allowable, provided that the water diversion does not interfere with neighboring groundwater riparian use to the point of injury.¹⁸ Other states have reviewed the topic of transfer of water rights in several different ways, reaching several different conclusions as noted below.

At the state level, rather than the level of the individual citizen, the topic and issues become less clear. One may reasonably expect this topic to be addressed sometime in the future, because of the

¹⁴ Dewsnap and Jensen, pp. 11-13, and Sax, pp. 2-3

¹⁵ This dual system of water rights is commonly referred to as the "California Doctrine." At one time this was the standard rule in all West Coast states and the tier of Great Plains States from North Dakota to Texas - Dewsnap, pp. 5-6, 129-30, 139-46 and 700-02.

¹⁶ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 463.

¹⁷ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 463.

¹⁸ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 463.

continuing controversy concerning the Missouri River (states upstream from Missouri are prior appropriation states, except Iowa), and Indian Tribal water rights in the upper basin of the Missouri River.

Additionally, Missouri's neighbor to the west, Kansas, is an upstream prior appropriation state from which several rivers flow across state lines and into Missouri. One such river is the Marmaton, on which the Corps of Engineers once proposed an impoundment (to be called the Fort Scott Reservoir, in their planning). This issue also is discussed in *Water Resource Sharing, the Realities of Interstate Rivers*, State Water Plan Series Volume VI, Water Resources Report No. 50, pages 49 and following.

Case Law – Attached Property Rights

The California case of *Boehmer v. Big Rock Creek Irrigation Dist.*, 117 Cal. 19, 48 P. 908 (1897), linked riparian ownership to title of ownership of land. Riparian lands do not cease to be riparian lands or lose associated riparian rights and riparian responsibilities with change in ownership. This practice is also followed in Missouri.

Paralleling *Boehmer*, and expanding that theme, is the Oregon case of *Jones v. Conn*, 39 Ore. 30, 64 P. 855 (1901). Here, the Oregon court held that tracts of land contiguous to the riparian land are to be treated as enjoying a riparian status if owned by a single owner, regardless of when the tracts of riparian land were acquired.

The 1926 Missouri case of *City of Cape Girardeau v. Hunze*, 314 Mo. 438, 284 S.W. 471, dealt with eminent domain as applicable to reasonable use under riparian rights doctrine. Here, the court pronounced that a municipality may be considered a riparian proprietor, where the city acquired the use of a creek as a sewer outlet through use of condemnation easement. The owners of land through which a natural watercourse flows are not absolute owners, by theory of mere riparian ownership, and must endure without remedy such impurities and pollution as find their way into the stream.

In *Pleasant Lake Hills Corp. v. Eppinger*, 235 Mich. 174, 209 N.W. 152 (1926), the Michigan courts held that riparian rights are separate from and severable from riparian lands and may be conveyed separately from fee [title]. The Connecticut courts found the opposite standing in the case of *Harvy Realty Co. v. Borough of Wallingford*, 111 Conn. 652, 150 A. 60 (1930), by holding that riparian rights are inherent with riparian lands, therefore, riparian owners can not convey riparian rights to others separate from the land. Like Missouri, both Michigan and Connecticut are riparian states.

Under *Bradley v. County of Jackson*, 347 S.W.2d 683 (1961), the Missouri courts confirmed that riparian rights arise from ownership of land abutting water. The court held that owners of property which abut an artificial lake acquire littoral rights to lake use for recreational and domestic purposes. Riparian rights arise from ownership of land abutting water and are incident of such ownership of "upland" regardless of ownership of submerged lands. Easements and convey-

ance of right-of-ways [sic] by owners to others, whose purpose is construction of an artificial lake, does not preclude use and enjoyment of the lake by owners whose property abuts the water's edge.

In *Armstrong v. Westroads Development Co.*, 380 S.W.2d 529 (St.L. Ct. App. 1964), the St. Louis Court of Appeals held that under the riparian doctrine, the right to use water from watercourses and lakes is limited to riparian owners, those owners of land in physical contact with the water.

¹⁹ Dewsnup and Jensen, pp. 70-71.

Federal Reserved Water Rights

The federal government owns and operates numerous sites and facilities across the state of Missouri that, because of their function, are restricted or closed to public use (such as Fort Leonard Wood). Additionally, other federal sites are public use areas (such as Mark Twain National Forest). As such, the federal government holds reserved water rights in federally owned land that is withdrawn from the public domain and reserved for a specific use by the federal government. Although the extent of these rights is not entirely clear, and these rights are dependent upon the type and use of the federal facility, it is potentially possible that federal reserved rights could supercede state and individual rights in certain situations.¹⁹ An example of this might be the quantity and source of water needed by a federal military post or base for its continued operation in time of national military alert or crisis. With the ever-increasing demands placed upon our water resources, this could potentially become a topic for legislative or judicial debate. (See Map of Major Federal Lands in Missouri, Figure 4.)

The legal doctrine of federal reserved water rights comes from the landmark case of *Winters v. United States*, 207 U.S. 564 (1908), in which the United States brought suit on behalf of the Native American tribes of the Fort Belknap Indian Reservation, located on the Milk River (a tributary of the Missouri River) in northern Montana.

In the *Winters* case, the federal government sued to restrain diversion of water from the Milk River upstream from the reservation by non-Indians, because insufficient water was reaching the reservation to meet Indian needs for development of the reservation's agricultural lands and related uses. The court found that the defendants (Winters and others) had "built large and substantial dams and reservoirs, and by means of canals and ditches and waterways have diverted the waters of the river from its channel, and have deprived the United States and the Indians of the use thereof."

The Fort Belknap Indian Reservation was established in an agreement with the Gros Ventre and other tribes in May, 1888, in a move that reduced the size of the former reservation (that essentially was the eastern half of the Montana Territory), "as and for a permanent home and abiding place for the [tribes]." The Indians ceded some of their former reservation, and non-Indians acquired land upstream of the new, smaller reservation. The new, non-Indian settlers began

irrigating the land, and obtained state appropriated water rights from Montana.

The Supreme Court, in deciding *Winters*, rejected arguments from non-Indian irrigators that the Indians had no reserved right because the ceded lands would be useless if the Indians had also reserved the water for the reservation lands they had retained. On the contrary, the Court reasoned, the supposition that the tribes had given up most of their lands and kept their reservation without the water to develop "agriculture and the arts of civilization" was not credible.

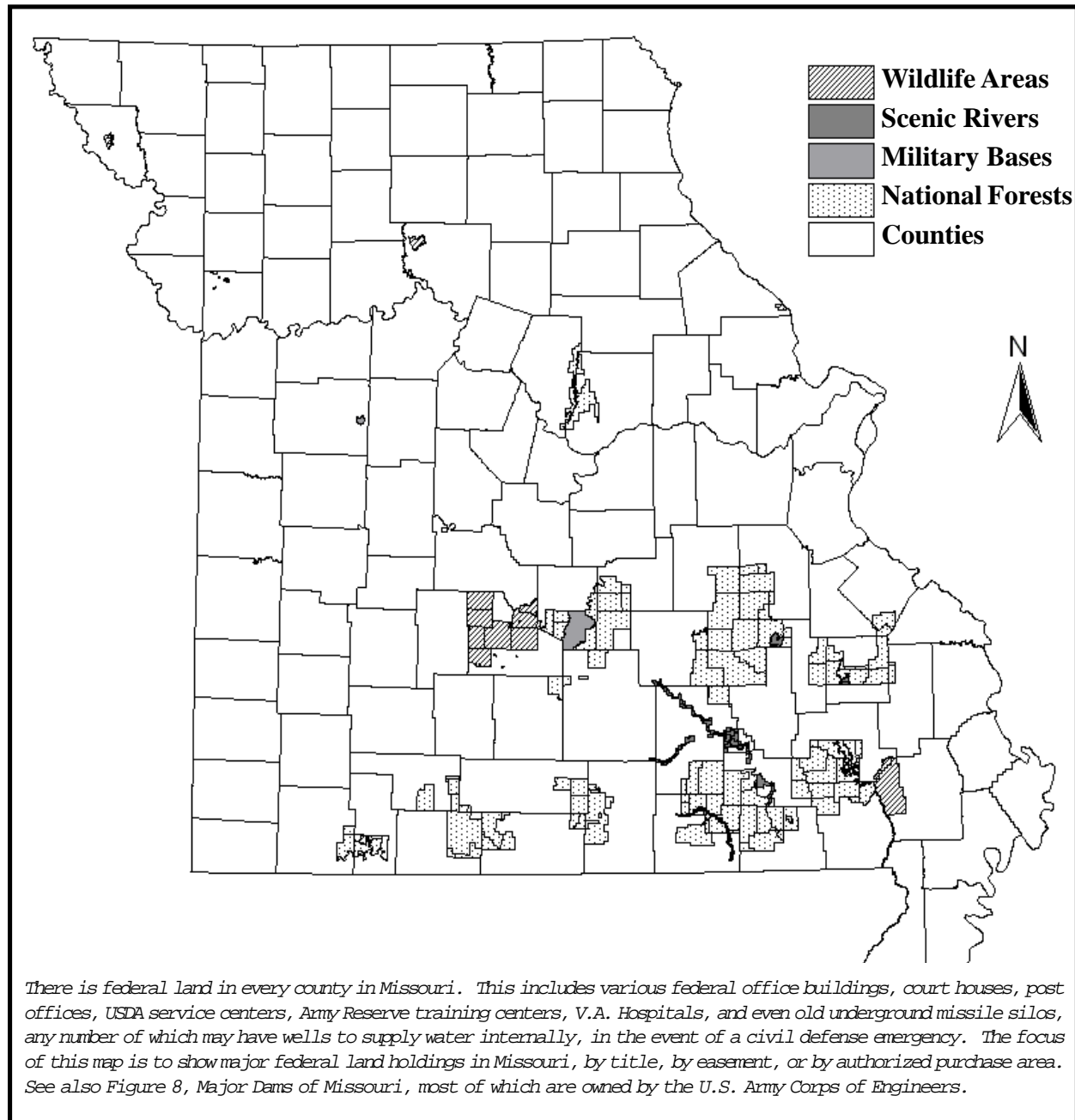


Figure 4. Map of major federal lands in Missouri. This gives some idea of the potential impact of the doctrine of federal reserved water rights. Source: GIS, DGLS.

Relative to Montana state water rights appropriations, the Court said that the "priority date" of the Indians' (federal) reserved right was the date the reservation was established. The court affirmed the injunction against the non-Indian irrigators, all of whom had commenced diversions after the reservation was established, and thus had junior priority dates. (Appropriative water rights are discussed above, and in the section on Water Use.)

The Court placed no limit on the amount of water to which the tribes were entitled in the future. The court said that the Indians had reserved the water which made their reservation "valuable or adequate." Therefore, the decree was open-ended.²⁰ The federal government holds the reservation lands (and waters) in trust for the tribes.

The ramifications of the "Winters Doctrine" to the use of water in the Missouri River within the State of Missouri are that there is not, at this writing, any definition of how much water the Native American tribes of the Upper Missouri Basin could divert for their use, or even for their marketing away from the reservations.

Other court cases that touch on this concept of federal reserved water rights include *Arizona v. California*, 373 U.S. 546 (1963), which changed somewhat the open-ended uncertainty of *Winters*, and the case of *Cappaert v. United States*, 48 L.Ed.2d 523, 96 S.Ct. 2062 (1976). In the latter case, the Court held, "When the federal government withdraws its land from the public domain and reserves it for a federal purpose, the government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation. Also, in doing so, the U.S. acquires a reserved right in unappropriated water, which vests on the date of the reservation and is superior to the rights of future appropriators. The federal reserved water rights doctrine applies to water in navigable and nonnavigable streams. [US Constitution, Article 1, section 8; and Article 4, section 3.] The implied reservation of water doctrine reserves to the government only that amount of water necessary to fulfill the purpose of the reservation of public land, and may include quantities of water to maintain or preserve items of scientific value or importance or objects of historical interest. The federal reserved water rights doctrine applies to both surface water and groundwater. The McCarren Act amendment does not require the United States to perfect its water rights in state court."

Federal Regulatory and Licensing Authority

Licensing authority is a grey area, shared between the federal and state governments. Since, within the hierarchy of law, the U.S. Constitution supersedes state constitutions, the federal government generally assumes preeminence on the basis of commerce and navigation.

The 1946 case of *First Iowa Hydro-Elec. Coop., v. F.P.C.*, 328 U.S. 152, tested federal regulatory powers. The federal court held that under the authority of the U.S. Constitution, the authority of the

²⁰20 Chambers, Reid, and Echohawk, John, *Implementing Winters Doctrine Indian Reserved Water Rights*, 1990.

United States to govern interstate commerce, the Congress is authorized to make rules preempting state law, a power which is wholly independent of the question of private ownership. A federal agency which is authorized by Congress to develop hydroelectric projects on waters subject to the commerce power does not have to submit to state rules and regulations as to how the water should be used.

The power and authority of the federal government was made quite clear in the case of *State of Washington Dep't of Game v. F.P.C.*, 207 F.2d 391 (9th Cir. 1953). The U.S. 9th Circuit Court of Appeals held that federal licensing authority supersedes state law.

Federal preeminence was again confirmed in *City of Tacoma Taxpayers v. F.P.C.*, 357 U.S. 320 (1958), where the court held that federal licensing authority on a navigable watercourse supersedes state statute.

Namekagon Hydro Co. v. F.P.C., 216 F.2d 509 (7th Cir. 1954), dealt with the economic value of recreational opportunities when siting a hydropower facility. The U.S. 7th Circuit Court of Appeals found that, when, in reviewing the application for a license to construct a facility, the Federal Power Commission considers, among other things, the unique quality and recreational value of the river. Efforts to attach only monetary values to such recreational interests of unique and most special types must fail if the purpose is to show all that will be affected if such recreational resources are impaired or destroyed. The recreational resources of a unique and most special type fall within a wide range as to their local, regional or national importance. The consideration of public interest is no less because a unique and special type recreational resource may have local or regional interest.

The case of *Scenic Hudson Preservation Conf., v. F.P.C.*, 354 F.2d 608 (2d Cir. 1965), dealt with legal standing for relief of review of federal licensing application, the protection of natural environmental qualities and historic value from hydropower development, and active court involvement in developing alternatives. The court found that economic injury is not a prerequisite for protection or relief where plaintiffs have shown a direct personal interest in a hydropower development proposal. The right of the public must receive active and affirmative protection at the hands of the Federal Power Commission during the license application and public comment review process. The Commission must see to it that the record is complete and must include, as a basic concern during the process, the preservation of natural beauty, and of national historic shrines, keeping in mind that the cost of a project is only one of several factors to be considered.

The federal Court of Appeals affirmed the federal government's constitutional authority over commerce and navigation in the case of *Nantahala Power & Light Co. v. F.P.C.*, 384 F.2d 200 (4th Cir. 1967), and held that federal licensing authority on nonnavigable streams where navigation is not affected but power is transferred to another state falls under the commerce clause rather than navigational servitude.

The case of *Udall v. F.P.C.*, 387 U.S. 428 (1967), dealt with federal licensing authority. Here, the court held that although the issue of federal development of water resources must be evaluated by the Federal Power Commission (FPC) in connection with its consideration of the issuance of any license for a hydroelectric project, the determinative test is whether the project will be in the public interest.

In a seemingly contradictory decision, steam power plants were determined by the federal courts to be outside federal jurisdiction, in the case of *Chemehuevi Tribe of Indians v. F.P.C.*, 489 F.2d 1207 (D.C. Cir. 1973), even if the plant is located on a navigable watercourse.

DIFFUSED SURFACE WATERS

Definition

In Missouri, diffused surface waters are defined by case law as waters derived from atmospheric precipitation and dispersed over the surface of the land, prior to entering a watercourse, therefore not part of a river or stream (a watercourse).²¹ As defined by Missouri case law, "surface waters" include "diffused surface waters."²² In Missouri statutory law, surface water includes water in watercourses, such as rivers and streams, and water in lakes, sloughs, ponds, and wetlands. Surface waters are defined by statute, Section 640.403, RSMo, as follows.

(7) **"Surface water"**, water in lakes and wetlands, and water in rivers, streams and their tributaries in which water flows for substantial periods of the year.

Statutory law, then, offers one definition for surface water, but this does not agree with the court-made definition. There is no Missouri statutory law on "diffused" surface water, it being addressed entirely in case law. Water, which is not part of an artificial or natural watercourse or lake, is diffused surface waters²³ and inversely stated, overflow water from streams and rivers is surface water.²⁴ The term, "surface water," refers to that form or class of water derived from falling rain or melting snow or which rises to the surface in springs and is diffused over the surface of the ground while it remains in that state or condition and has not entered a natural water course. The term also refers to overflow and floodwaters that become severed from or leave the main current of the natural water course and spread out over the lower ground.²⁵ Missouri courts tend to use the terms "surface water" and "diffused surface water" interchangeably.

Reasonable Use as Applied to Surface Waters

The rule of comparative reasonable use governs surface waters in Missouri. It is applicable to both drainage water and floodwater. Practically all case law on this topic deals with "use" as preventive measures from unwanted water, rather than beneficial "use."

²¹ *Keyton v. MKT Rail Road*, 224 S.W.2d 616 (1950)

²² *Jones v. Hannovan*, 55 Mo. 462 (1874); *Place v. Union Township*, 66 S.W.2d 584 (1933); *Keener v. Sharp*, 341 Mo. 1192 (1937); *Haith v. County of Atchison*, 793 S.W.2d 151 (1990)

²³ *Jones v. Hannovan*, 55 Mo. 462 (1874)

²⁴ *Goll v. Chicago & Alton Ry.*, 271 Mo. 655 (1917)

²⁵ *Keyton v. MKT Rail Road*, 224 S.W.2d 616 (1950)

²⁶ See *Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n.*, 859 S.W.2d 681(1993).

In the case of *Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n.*, 859 S.W.2d 681 (Mo. 1993), the Missouri Supreme Court re-defined the difference between floodwaters and drainage waters, and overturned the modified common enemy doctrine in favor of comparative use reasonableness doctrine for drainage water. "The Missouri Supreme Court adopts rule of reasonable use, rather than common enemy doctrine, to govern disputes involving diversion of surface waters, as rule most likely to promote optimum development and enjoyment of land, while ensuring equitable distribution of costs among competing interests at hand. Reasonableness of interference with flow of surface waters under rule of reasonable use is question of fact, to be determined in each case by weighing gravity of harm to plaintiff against utility of defendant's conduct. Reasonableness is the vital concept of the common law (*City of Franklin v. Durgee*) and already governs the rights of users of watercourses, underground streams, and underground percolating waters (*Bollinger v. Henry, Higday v. Nickolaus*)."

Another recent landmark case involving surface waters (floodwater), *Campbell v. Anderson*, 866 S.W.2d 139 (Mo. Ct. App. 1993), involved rechannelization of a creek by adjoining landowners. Where rechannelization of a creek creates a temporary structure, the rule of reasonable use is applicable to surface water runoff, providing that each possessor is legally privileged to make reasonable use of his land, even though the flow of surface waters is altered thereby and causes some harm to others, interference is acceptable, until the harmful interference with flow of surface waters becomes unreasonable.

These two cases mark the beginning of the adoption of the "reasonable use" doctrine in regard to surface water flows, taking the place of the modified common enemy doctrine in Missouri jurisprudence. It seems that the determination of what specifically is to be construed as "reasonable" will be determined by the court in each individual case for at least the near future until a body of more generalized judicial guidelines are developed by the Missouri courts.²⁶

All that being said, the Missouri General Assembly, in passing House Bill 1161 in 1998, and the Governor, in enacting the bill that became Section 644.018, RSMo, provided a statutory meaning of "reasonable use" of flood-prone land, as follows.

644.018. In any contested case or judicial proceeding filed after January 1, 1998, involving surface water in any flood prone area, if any defendant has obtained and fully complied with a permit from a political subdivision which has enacted orders or ordinances as required by the Federal Emergency Management Agency as a prerequisite to participation in the National Flood Insurance Program, and which political subdivision has jurisdiction, pursuant to the zoning laws of this state or the laws and regulations of the Federal Emergency Management Agency, over the area in dispute, then the proper permitting and compliance with all conditions of such permitting of such project shall be

conclusive proof that the project is a reasonable use and meets any reasonable use test imposed by law or by a court. Potentially this statute could become a topic of judicial debate.

Surface Water and Land Drainage Rights

Land drainage helps remove excess moisture from the soil. Some soils do not drain well naturally, so they are aided by the digging of ditches, or the laying of underground drain tiles. Section 244.010, RSMo, gives landowners the statutory right of drainage for sanitary or agricultural purposes. Soils that are so drained may be reclassified by soil scientists as "prime" agricultural lands, thereby increasing both their market value and their production capability. The courts have recognized the right of a landowner to drain agricultural land.²⁷ The next three cases cited below address what drainage districts may or may not do. The remaining cases in this grouping also address drainage and provide general guidance. The following cases are listed chronologically to illustrate the courts' progression of reasoning toward the doctrine of reasonable use.

The court, in *Schalk v. Inter River Drainage Dist.*, 226 S.W. 277 (Mo. 1921), held that the cutting by a drainage district of a borrow pit into a river so as to lower the banks of the river three feet and thereby cause water to submerge lower lands, which would not be submerged otherwise, is an unlawful diversion of the waters of a river from their channel.

Anderson v. Inter-River Drainage & Levee Dist., 309 Mo. 189 (Mo. 1925), dealt with drainage, levees, eminent domain, and protection from overflow waters. Overflow water was caused by a high levee. The court ruled that a drainage district on one side of a river is not liable for damages for injuries to somewhat higher lands on the opposite side of the river, outside the district boundary. The drainage district did not obstruct the river channel or change the natural watercourse. While the drainage district is not an individual landowner, it has power to drain swamps and overflow lands. It falls within the police powers of the state, as the drainage district is organized and authorized under statutes of a subdivision of the state.

Sigler v. Inter-River Drainage Dist., 311 Mo. 175, 279 S.W. 50 (1925) addressed floodwater, the common enemy doctrine, and drainage of diffused surface waters. The law allows for the construction of dams, dikes or other construction by landowners to protect their premises from overflow water and as a consequence other lands are flooded.

The court held, in *White v. Wabash Ry.*, 240 Mo. App. 344, 207 S.W.2d 505 (K.C. App. 1947), that statutory law²⁸ requires railroads to build ditches and drains along the rail bed, therefore unless negligence can be shown, railroads are not liable for excess water cast onto the property of another.

Casanover v. Villanova Realty Co., 209 S.W.2d 556 (St. L. Mo. Ct. App. 1948), also dealt with drainage of diffused surface water, as well

²⁷ See *Dudley Special Road Dist. v. Harrison*, 517 S.W.2d 170 (1974).

²⁸ RSMo. 1939, §5222 (this is presently cited as RSMo. 1994, §389.660).

²⁹ While the common enemy doctrine is no longer followed in Missouri, portions of the holding in this case dealing with "a landowner's use of his property in any lawful manner," and "owner of higher tract of land cannot collect and then cast it onto the lower's property" appear to remain valid. See *Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n.*, 859 S.W.2d 681 (Mo. 1993), and *Campbell v. Anderson*, 866 S.W.2d 139 (Mo. Ct. App. 1993).

as the modified common enemy doctrine.²⁹ A landowner may use his land in any lawful manner for any lawful purpose, and has the right to alter the grade or slope of land in the absence of contrary legal restriction. Alteration of grade and removal of ground cover imposes no liability on an upper owner for resulting damages to a lower owner since upper owner's land is above lower owner's land, prior to the change in grade. Common law treats surface waters flowing from higher ground to lower lands as a common enemy and permits one to protect his property by whatever means available, notwithstanding the owner of the higher land cannot unnecessarily collect surface water thereon and then cast it onto lower land. The pumping of water onto a lower lot from a higher tract and the pushing of loose earth onto another lot by means of machine grading are, however, acts of trespass. Flowage of surface waters, including mud and silt from the higher to the lower tract which damages the property of the lower constitutes trespass.

In *Young v. Moore*, 236 S.W.2d 740 (Spr. App. 1951), the appellate court held that "the defendants were within their rights under statutory and common law to drain their land of surface water for agricultural purposes." The court noted that the ditch had been "maintained openly and notoriously" for forty years in the community, and was theirs by adverse possession.

In the case of *Weir v. Wilmes*, 688 S.W.2d 53 (Mo. App. 1985), the court addressed drainage water in drainways. This was a surface water case involving a natural waterway, where the court held "the upper landowner is not liable, if his construction of drainage tile did not change direction of flow of natural drainage emptying it onto the lower's land, and drainage from tiling did not exceed capacity of natural drainage of land, the upper owner making reasonable use of his land, and that the tiling did not collect or permit to be collected the normal flow of surface waters and thereupon direct or discharge the water onto the lower's property in concentrated and destructive quantities injurious to the lower owner."

GROUNDWATER

Definitions

In Section 640.403, RSMo, the following definitions appear.

(1) **"Aquifer"**, a consolidated or unconsolidated subsurface water-bearing geologic formation, group of formations, or part of a formation, or other geologic deposits, capable of yielding a usable or potentially usable amount of water;

(4) **"Groundwater"**, water occurring beneath the surface of the ground, including underground watercourses, artesian basins, underground reservoirs and lakes, aquifers, other bodies of water located below the surface of the ground, and water in the saturated zone;

(9) **"Water Resources"**, water in rivers, streams and their tributaries and water present in aquifers.

Missouri case law distinguishes between "percolating groundwater" and "underground streams." An underground stream is differentiated from percolating groundwaters in that a definable and traceable belowground flow exists, which can be observed and proven through means of scientific testing. Significant is the fact that case law on the topic of groundwater has evolved over the decades. Percolating groundwaters were previously held by the courts to be owned by the landowner, and underground streams were governed by the same legal rules of reasonable usage that apply to surface watercourses. Presently, the rule of comparative reasonable use governs the use of percolating groundwater and water from underground streams³⁰, making any distinctions between the two sources a moot point so far as water use is concerned.³¹ Missouri courts rely from time to time on judicial precedent established in other states. Following this, are some cases which show the evolution of opinion: The first section is on definitions; and the second concerns groundwater use.

³⁰ *Higday v. Nickolaus*, 469 S.W.2d 859 (K.C. Ct. App. 1971)

³¹ Davis, P.N., "Missouri," in Beck, ed. *Waters and Water Rights*, p. 458.

Groundwater Defined in Case Law

In the Maryland case of *Finley v. Teeter Stone, Inc.*, 251 Md. 428, 248 A.2d 106 (1968), the court held that "subterranean waters" are generally considered to be underground streams or percolating waters. To be classified as an underground stream, water must flow in a definite and fixed channel whose existence and location are either known or may be ascertained from indications on the surface of the land or by other means without subsurface excavations to determine such existence and location. On the other hand, the court held that "percolating waters" are those which ooze, seep or filter through soil beneath the surface without a definite channel or in a course that is unknown or not discoverable from surface indications without excavations for that purpose, and the fact that they may, in their underground course, at places come together so as to form veins or rivulets does not destroy their character as percolating waters. Unless it can be shown that underground water flows in a defined and known channel, it will be presumed to be percolating water.

Three years later, what is probably the most important Missouri court case on this topic came in *Higday v. Nickolaus*, 469 S.W.2d 859 (K.C. Ct. App. 1971), where the court held, an underground stream is defined as water that passes through or under the surface in a definite channel or one that is reasonably ascertainable. Percolating waters include all waters which pass through the ground beneath the surface of the earth without a definite channel and not shown to be supplied by a definite flowing stream. They are waters which ooze, seep, filter, or otherwise circulate through the interstices of the subsurface strata without a definable channel, or in a course that is not discoverable from surface indications without excavations for that purpose. The court held that the rule is that all underground waters

are presumed to be percolating and therefore the burden of proof is on the party claiming that a subterranean stream exists. (See Figure 5, Onondaga Cave Map, showing an example of an underground stream.)

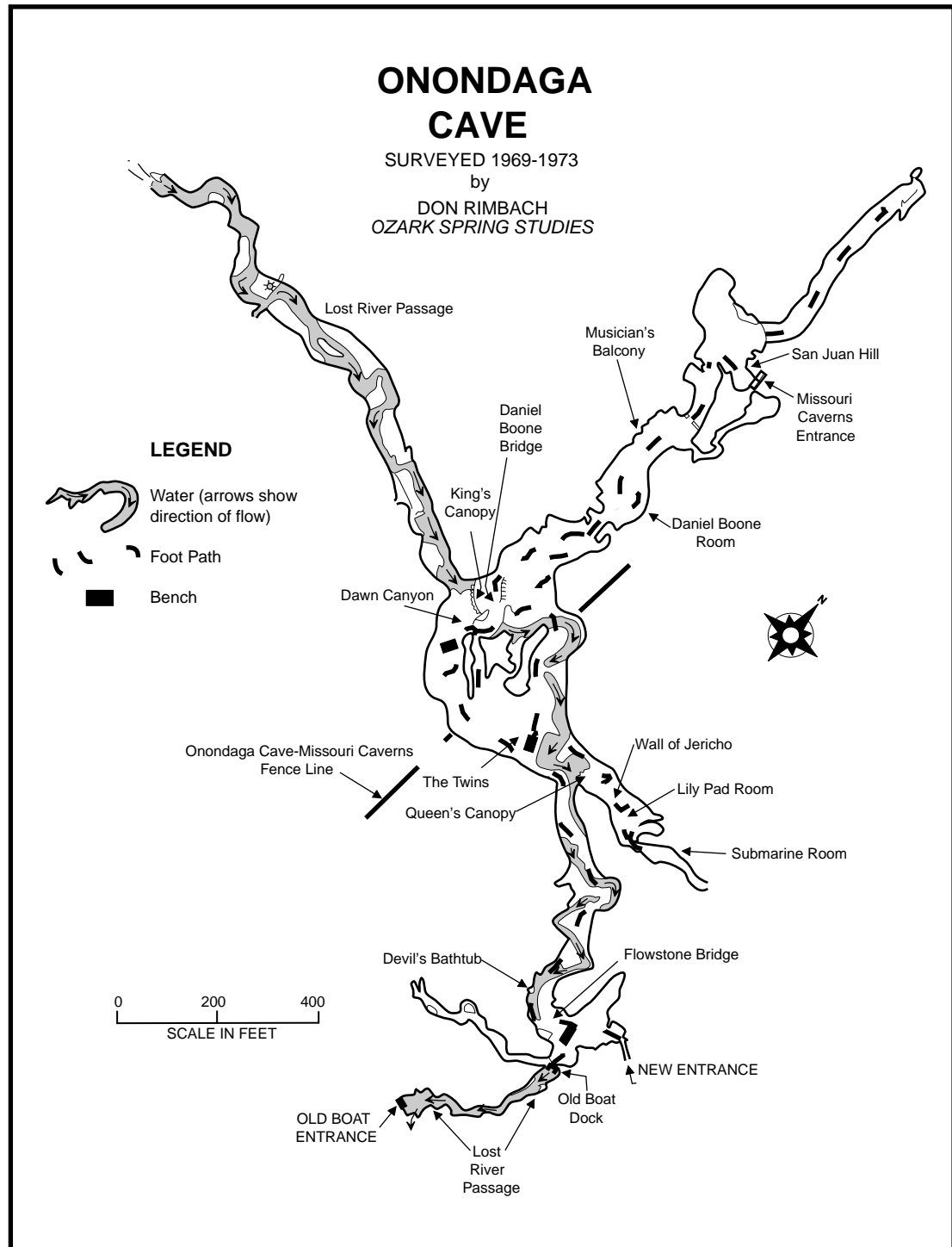


Figure 5. Map of Onondaga Cave in Crawford County, showing Lost River, an example of an underground stream, a classification of groundwater. Source: Onondaga Cave State Park, DSP.

Groundwater Use

The judicially defined status of groundwater in Missouri is especially interesting since it has evolved through case law from property which could be privately "owned" to something which is usufructory only. The following cases illustrate this evolution.

An early case from out-of-state was *Roath v. Driscoll*, 20 Conn. 533 (1850), wherein the court held that percolating groundwater is owned entirely by the landowner, and the effect of his use of such waters upon neighboring land is immaterial; the user of the water may only be held accountable for waste or malicious injury. Also there was *Frazier v. Brown*, 12 Ohio St. 294 (1861), in which another state court held that the landowner owns all percolating water which is found beneath his land and may use it in any manner he chooses, including sale of the water.

A Missouri court ruled on absolute riparian ownership of percolating groundwater in the case of *Springfield Waterworks Co. v. Jenkins*, 62 Mo. App. 74 (1895). "Percolating groundwater," said the court, "is regarded as a part of the soil to which an adjoining proprietor has no absolute or natural right. It belongs to the owner of the land, and its diversion and appropriation by him for the improvement or benefit of his estate can not be made the basis for complaint against him by anyone, however grievous the injury may be."

The Illinois court found, in *Behrens v. Scharringhausen*, 22 Ill. App. 2d 326, 161 N.E.2d 44 (1959), that "the landowner owns all percolating water which is found beneath his land and may use it in any manner he chooses."

DeBok v. Doak, 188 Iowa 597, 176 N.W. 631 (1920), is one of the first cases to apply the concept of reasonable use to percolating groundwater. The court held that "use of percolating groundwater is permitted if such use is reasonable and for the benefit of the overlying estate. The upper landowner is not permitted to waste underground waters if they run in a well defined stream and supply a spring."

In the Arkansas case of *Jones v. Oz-Ark-Val Poultry Co.*, 228 Ark. 76, 306 S.W.2d 111 (1957), the court held that "the reasonable use rule of use of groundwater allows the landowner to use water with regard to his neighbors' needs, while the 'eastern correlative rights rule' allows landowner use of percolating groundwater when beneficial to the overlying estate. The reasonable use rule applies to water rights of riparian owners. The reasonable use rule applies to true subterranean stream or to subterranean percolating waters. Where two or more persons own different tracts of land, which are under laid by porous material extending to and communicating with them all, and which are saturated with water moving with more or less freedom therein, each person has common and correlative right to use of water on his land, to the full extent of his needs, if common supply is sufficient, and to extent of reasonable share thereof, if supply is so scant that use by one will affect supply of others."

Several years later in the case of *Finley v. Teeter Stone, Inc.*, 251 Md. 428, 248 A.2d 106 (1968), a Maryland court held that the reason-

able use rule applies to percolating groundwater and its use is permitted if both reasonable and for the benefit of the overlying estate.

The case of *Higday v. Nickolaus*, 469 S.W.2d 859 (K.C. Ct. App. 1971), addressed percolating groundwater, ownership of groundwater, the comparative reasonable use doctrine, and underground streams in Missouri. The Kansas City Appellate Court held that groundwater is not owned, and in doing so, initiated a new era in groundwater law in Missouri.

This case is one of the most significant in Missouri water law history not only because of the decision handed down by the court but also because of the court's extensive discussion of its reasoning in reaching its decision. It is often cited by Missouri courts in other cases and is referred to numerous times in this water law summary. (See Figure 6, Location Map of McBaine Bottoms.)

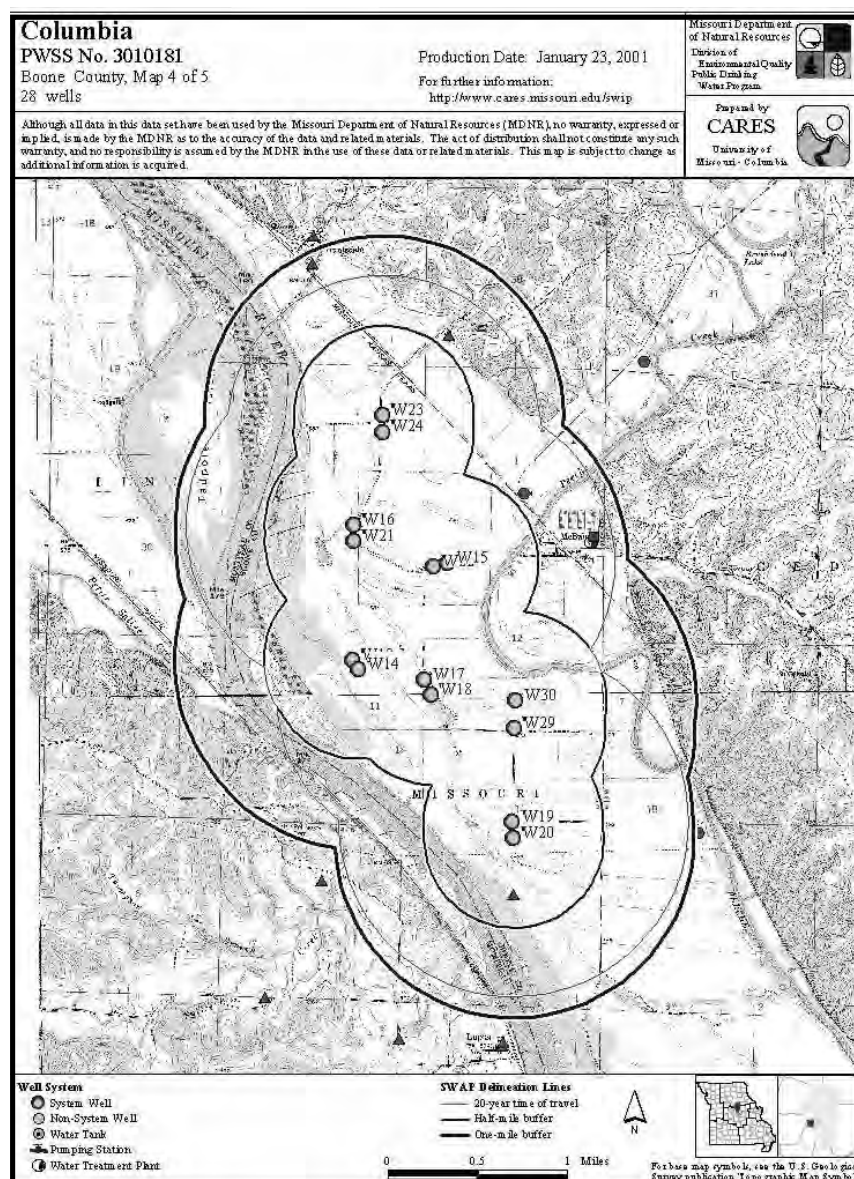


Figure 6. Map of McBaine Bottoms, left bank of the Missouri River, Boone County, the site of the dispute that led to the case of *Higday v. Nickolaus*, showing the well field of the city of Columbia. Source: Public Drinking Water Program, DEQ.

The case stemmed from a petition filed by Higday and other landowners for a judicial declaration that the City of Columbia was without right to extract percolating waters from under their lands for the purpose of sale off premises. Higday and the other landowners in this suit owned several tracts of farmland overlying an alluvial water basin in Boone County in the area known as the McBaine Bottoms. The farmland in question totaled approximately 6,000 acres and encompassed the area bordered by the Missouri River to the west, the limestone bluffs to the east, the community of Huntsdale to the north and the community of Easley to the south. Underlying the entire plain is porous rock, gravel and soil through which water from the Missouri River filters as it moves southward. Higday and the other appellants used the overlying lands for the farming of row crops, with excellent yields provided by the abundant groundwater supply. The appellants also used some of the groundwater for personal consumption, livestock water and were planning to use additional amounts for irrigation.

The respondent was the City of Columbia, Nickolaus being an employee of the city, a growing urban area, which was searching for a water source to replenish its dwindling supplies. Following an engineering plan, which the city commissioned, it developed a shallow well field to withdraw water from the McBaine Bottoms and a pipeline transport system to supply the water to the city's water treatment plant. The city proposed to extract some 11.5 million gallons daily for purposes wholly unrelated to any beneficial use of the overlying land, some of which it had purchased, but rather to pipe the water to the city for the purpose of sale. The circuit court finding was appealed to an appellate court and its decision was appealed to the Missouri Supreme Court.

Upon appeal, the appellate court finding was reversed by the Missouri Supreme Court and remanded to the lower court for review. The Supreme Court rejected the absolute ownership rule of percolating groundwater in favor of the reasonable use rule. "The rule of reasonable use should apply to subterranean percolating waters," according to the court. "What is reasonable use of property must depend to great extent upon many factors including persons involved, their relative positions, nature of their uses, comparative value of their uses, climatic conditions, and all facts and circumstances pertinent to the issues. It is that legal standard, in absence of statutory expression, by which existing water resources may be allocated most equitably and beneficially among competing users, private and public. The application of such a uniform legal standard would also give recognition to the established interrelationship between surface and groundwater and would, therefore, bring into one classification all waters over the use of which controversy may arise, the court said. Under the rule of reasonable use as stated, the fundamental measure of the overlying owner's right to use the groundwater is whether it is for purposes incident to the beneficial enjoyment of the land from which it is taken."

³² *Keener v. Sharp*, 341 Mo. 1192 (1937)

Statutory Law

Sections 578.200 – 578.225, RSMo, constitute the Missouri Cave Resources Act, related to protection of underground streams and other natural resources. (See Figure 5, Cave Map.) Sections 640.409 and 640.412, RSMo, requires the DNR to establish, develop and maintain groundwater and surface water monitoring and inventory programs. These requirements include determination of baseline water quality data, trends in the contamination of ground and surface waters, identification of areas highly vulnerable to contamination, and the uses, use patterns, and quantities of surface and groundwaters available. The activities to fulfill these requirements include aquifer mapping, dye tracing, test well observations, and major water user registration. It is important to note that this law does not regulate water use, or discuss water ownership. It merely directs an agency of Missouri government to gather data, make assessments, and prepare plans and reports for public knowledge. (See *Water Resources Law 1999 Annual Report* for details of how the terms of this law are carried out.)

STREAMS AND STREAMBEDS

Defined by case law, a river or stream is a body of water flowing in a channel, having a bed and banks, even though it may go dry occasionally.³² As per the Missouri Water Resource Law, Section 640.403, RSMo, this definition appears:

(7) **"Surface water"**, water in lakes and wetlands, and water in rivers, streams and their tributaries in which water flows for substantial periods of the year.

As mentioned earlier, case law defines surface water as differentiated from water in watercourses (rivers and streams), and so Missouri has both statutory and case law definitions that do not match. It is possible that this will be resolved, someday. As it presently stands, state government, predominantly, uses the statutory definition, while private individuals tend to use the judicial definition. Apparently this is because government agencies answer to the General Assembly, the source of statutory law, while individuals are mainly interested in individual rights pertaining to water use and are directly affected by dispute resolution (civil litigation through the court system). It is important to remember that statutes discussing "surface water" include rivers and streams, lakes, ponds and wetlands, while cases that discuss "surface water" are strictly limiting discussion to water that is on the surface of the ground, floodwaters, overflow waters, and drainage waters, but not the water in rivers or streams.

Watercourses Defined in Case Law

The judicial distinctions between surface waters flowing across the landscape and water flowing in watercourses (streams) have been stated earlier in this chapter under the topic of Diffused Surface Wa-

ters. Court cases have been argued for generations on the fine distinctions to be made in definitions. Some cases are summarized below which are intended to help understand the distinctions.

Benson v. Chicago & Alton R.R. Co., 78 Mo. 504 (1883), is an early case that defined what constitutes a watercourse: There must be a stream, usually flowing in a particular direction, though it need not flow continually. It must flow in a definite channel, having a bed, sides or banks, and usually discharge itself into some other stream or body of water. It must be something more than a mere surface drainage over the entire face of a tract of land, occasioned by unusual freshets or other extraordinary causes. It does not include water flowing in the hollows or ravines in land, which is the mere surface water from rain or melting snow, and is discharged through them from a higher to a lower level, but which at other times are destitute of water. Such hollows or ravines are not in legal contemplation watercourses, the court held.

Brill v. Missouri, Kansas and Texas Railway Co., 161 Mo. App. 472, 144 S.W. 174 (1912), dealt with riparian rights in a watercourse when an artificial channel is substituted for a natural one, or is created under such circumstances as indicate that it is to be a permanent watercourse as though it was created by nature. The fact that a watercourse is not ancient does not confer the right to obstruct it, and is not changed by the fact that it was at one time an artificially created channel which assumed the characteristics of a watercourse, and as a result, riparian rights attach to it.

In the case of *Keener v. Sharp*, 341 Mo. 1192, 111 S.W.2d 118 (1937), the court identified the characteristics of a watercourse. A "water course" is a stream or brook having a definite channel for the conveyance of water which may include surface water which loses its character as such when it enters the channel, but water which ceases to remain in the channel and spreads out over surface lowland and runs in different directions without definite channel ceases to be a "stream" or "water course." Something more than a mere surface draining, swelled by freshets and melting snow, is required to constitute a "branch" or "stream." A winding bayou, 10 to 12 feet in depth, connecting lake with river and having well defined banks and channel, and containing running water most of the year, the volume depending on the rainfall and stage of the river, is a "natural water course" and water while confined in the channel was not "surface water."

Monitoring

In Section 640.409, RSMo, DNR is charged with establishing an ongoing statewide surface (including streams and rivers) and groundwater monitoring program, the purposes of which include:

- (1) Determination of ambient surface and groundwater quality for use as background or baseline water quality data;
- (2) Detection of trends in the character and concentration of contaminants in surface and groundwater resources; and
- (3) Identification of areas highly vulnerable to contamination.³³

³³ These directives are being carried out by several programs of the Department of Natural Resources. See *Missouri Water Resources Law Annual Reports* for specific details.

³⁴ This topic is covered in more detail in the section on Water Use; and in *Water Use of Missouri*, State Water Plan Series Volume IV, Water Resources Report Number 48.

³⁵ The federal test for navigability is found in the case of *Slovensky v. O'Reilly*, 233 S.W. 478 (1921), and the state tests for navigability are found in the cases of *Elder v. Delcour*, 364 Mo. 835 (1954), and *Sneed v. Weber* 307 S.W.2d 681 (1958). Navigability is discussed in detail in the sections on Water Use and Boundary and Interstate Waters.

³⁶ This subject is more thoroughly addressed in the section on Boundary and Interstate Waters.

In addition, Section 640.412, RSMo, charges DNR with making an inventory of:

- (1) Existing surface water and groundwater uses;
- (2) The quantity of surface water and groundwater available for uses in the future; and
- (3) Water extraction and use patterns, including regulated and unregulated uses.³⁴

Islands

Section 241.290, RSMo, grants all state lands formed in beds of lakes and rivers by the recession or abandonment of waters, and islands formed in navigable³⁵ waters of the state, to the respective counties. Supplemental to this section, Section 241.291, enacted in 1971, grants all islands which have formed in the Mississippi and Missouri Rivers, and not otherwise appropriated, to the Missouri Conservation Commission (or, secondarily, to the state park board). Section 241.300 grants future abandoned riverbeds, lake beds and islands to the counties of the state.

Islands in Watercourses

In *Hahn v. Dawson*, 134 Mo. 581, 36 S.W. 233 (*En Banc* 1896), the court held that a riparian owner does not take title to islands formed in navigable waters, while in the case of *T. L. Wright Lumber Co. v. Ripley County*, 270 Mo. 121, 192 S.W. 996 (1917), the court determined that an island which forms in the bed of a non-navigable stream is the property of the riparian who owns the bed where the island has formed.³⁶

WATERSHEDS

Definition

Section 640.403, RSMo, contains the following:

"(8) '**Watershed**', the area that drains into a river, stream or its tributaries."

A watershed is a surface drainage area, usually extending from high ground at the edges, to a valley and a stream most often along a central axis. Precipitation within a watershed drains typically to a central waterway of some type (a brook, creek, stream, or river). Every stream has its own watershed. Small watersheds may be grouped together by mapmakers to form larger watersheds. Groups of tributaries' watersheds, then, can comprise a larger watershed. Large watersheds are sometimes called "basins." Groundwater flow, however, is not necessarily controlled by surface watershed divides and therefore can create cross-surface watershed contributions.

The largest basin in the United States is that of the Mississippi River. Sub-basins of the Mississippi include the Missouri, Ohio, Arkansas, Tennessee, and Illinois basins. Watersheds (or sub-basins) of

the Missouri include the Osage, Grand, and Kansas sub-basins. The typical watershed is named after the stream that drains it.

Chapter 278, RSMo, enacted in 1939, authorizes the formation of state Soil and Water Conservation Districts (Sections 278.060 – 278.155), and authorizes Watershed Protection and Flood Prevention subdistricts (Sections 278.160 – 278.300). The relationships with the Curators of the University of Missouri and the Cooperative Extension Service are spelled out (Sections 278.020 – 278.050), and provisions of federal law (the Soil Conservation and Domestic Allotment Act of 1936 [16 USCA 590]) are integrated (Section 278.010,2). Soil and water conservation by the prevention of erosion by wind and water are primary missions of the U.S. Department of Agriculture. The Soil and Water Conservation Program, DNR, supports these efforts.

Watershed Protection and Flood Prevention, covered by Sections 278.160 to 278.300, RSMo, are parts of the Soil Conservation Law. Subdistricts of a Soil and Water Conservation District may be formed under this statute, for carrying out projects which may be largely funded by federal revenues through the U.S. Department of Agriculture under Public Law (P.L.) 83-566.

No Missouri cases were identified that dealt with water rights attached to watersheds. Riparian case law is typically oriented towards the rights and restrictions on the water uses of individual landowners, rather than larger tracts of lands with multiple owners.

WETLANDS

Definition

Missouri has no official wetland definition.³⁷ Wetlands are defined by the various agencies that work with wetlands, to help them administer sections of the federal Clean Water Act, in which wetlands are included as "waters of the United States."

The various federal agency definitions are based on three elements that all agencies agree make a wetland--namely, the hydrology, hydric soil, and hydrophytic vegetation.³⁸ Therefore, for a place to be called a wetland, by federal agency definitions, it must meet three tests. Wetlands are areas that are saturated with water or are under water for part of a year (the hydrologic test) often enough and for a long enough time that the area supports life forms adapted to saturated soils (the hydric soil test). Sometimes water may pool in a wetland, and sometimes a wetland may be dry, but the prolonged presence of water at or near the surface governs the kinds of plants that can grow there (the hydrophytic vegetation test), and the kinds of wildlife that can inhabit the area.

Swamplands, marshes, bogs, and fens are commonly included in the term wetlands. Chapter 241, RSMo, is entitled "Swamplands, Islands, and Abandoned Riverbeds." Specifically, Sections 241.010 to 241.270, RSMo, cover "Swamp and Overflowed Lands." This statute relates largely to a federal act of 1850, wherein lands owned by the

³⁷ Epperson, Jane E., *Missouri Wetlands: A Vanishing Resource*, Mo. DNR/DGLS, Water Resources Report No. 39, 1992, p. 20.

³⁸ Epperson, p. 22.

³⁹ Davis, P.N., "Recreational Use of Water-courses," pp. 75-76.

United States were donated to the organized counties for the purpose of what then was termed "reclamation."

"Reclamation" meant clearing and draining the swamplands for use as agricultural land. In Missouri, these lands were chiefly located in the "Bootheel" region, which is the southeast corner of the state. Consequently, most of the Bootheel region has been drained and cleared of trees, and now is predominantly used for agricultural purposes.

Section 21.475, RSMo, establishes the Joint Committee on Wetlands of the Missouri General Assembly. This is an oversight committee of the state legislature. The DNR, the Department of Transportation (MoDOT), and the Department of Conservation (MDC) all work in the field of wetland planning and protection. Missouri has a Wetland Advisory Council, and the improvement of wetland habitat is an objective of the Missouri Department of Conservation (MDC) and DNR. This legislation was enacted in 1992, for the purpose of keeping the state legislators informed about wetland activities in Missouri. As stated below, wetland regulations are federal. Conversion of wetlands (what formerly was called reclamation) no longer is a policy of the federal government.

Wetland Case Law

Wetland case law, being a relatively new topic in the court system, is in somewhat of a state of flux and evolution, as is apparent from the holdings of different courts. No Missouri cases specific to wetlands were identified. In Missouri, as of this writing, wetland regulation is left entirely to the federal government.³⁹ The cases listed below, while discussing wetlands, were brought as lawsuits primarily under the topics of eminent domain, and health and the environment under the Federal Water Pollution Control Act and the Clean Water Act. As can be seen from the cases below, what legally does and does not constitute a "wetland" is not entirely consistent. One can reasonably expect to see further clarification and more detailed discussion of wetlands in general and in particular in those areas adjacent to navigable waters of the U.S., and in areas known to be subject to earthquakes.

Wetlands Defined by Court

In the 1979 Louisiana case of *Avoyelles Sportsmen's League v. Alexander*, 473 F.Supp. 525, suit was brought by plaintiff Alexander (Secy. of the Army, chief military officer of the Corps of Engineers), alleging that land clearing activities by the defendants were in violation of various laws including the Federal Water Pollution Control Act. In response to the question posed by the plaintiff, the federal appellate court found that, "that section of the Federal Water Pollution Control Act making it unlawful to discharge any pollutant into the waters of the U.S. unless a permit is granted, is directed only at point sources of pollution. Land clearing equipment not commonly

used in farming are point sources of pollution. Trees, leaves and vegetative matter constitute dredged or fill material for purposes of effectuating the Federal Water Pollution Control Act. Wetlands, within the meaning of the Federal Water Pollution Control Act, includes vegetation which grows thereon and thus permanent removal of wetland vegetation in the process of converting it to farmland is subject to permit program as established under the Federal Water Pollution Control Act."

In the case of *United States v. City of Fort Pierre, South Dakota*, 580 F.Supp. 1036 (1983), the United States brought suit against the city alleging violation of the Clean Water Act by its discharge of fill into a wetland area without a permit. The court determined that, "the slough"⁴⁰ in question was frequently inundated and saturated, contained wetland characteristic vegetation, and had wetland characteristic soils, therefore was wetlands under the meaning of the Federal Water Pollution Control Act. The slough was adjacent to water of the U.S. and thus also qualified as wetlands within the meaning of the Clean Water Act, and its prohibition against placing fill material into wetland waters without a permit. The prosecution of the City for violating prohibition of the Clean Water Act against discharge of fill material into a wetland area was not precluded by the Corps of Engineers' failure to comply with the Administrative Procedure Act in acting on the city's permit application where the Corps procedures were not governed by the Act and where the City itself brought the permit process to a stop by failing to wait for the process to be completed before discharging its fill material into the slough.

In the case of *United States v. Ciampitti*, 615 F.Supp. 116 (N.J. 1984), the government brought suit seeking a permanent injunction restraining the defendants from engaging in placing fill material in a New Jersey wetland site. "Where the property is characterized by saturated soil and aquatic vegetation, the property constitutes a wetland," wrote the court. The defendants were enjoined from placing further fill material in the wetland and were required to prepare a plan, under the supervision of the Corps of Engineers, to return the site to a wetland.

The court reached a seemingly contradictory interpretation in the Michigan case of *United States v. Riverside Bayview Homes, Inc.*, 729 F.2d 391 (1984), where the federal government brought legal action against the owner of undeveloped suburban land alleging that the deposition of fill material on the land violated wetland regulations of the Corps of Engineers. The court held that the undeveloped suburban land was not wetlands, even though it was frequently inundated and the water caused aquatic vegetation to grow on the land. "The statutory authorization for the regulation of wetlands defined the subject matter intended to be protected only as navigable waters, and thus regulation, by the Corps, would be interpreted to apply to marshes, swamps, and bogs directly created by flooding of navigable waters and not to include inland low-lying areas. Low-lying land

⁴⁰ "A swamp, bog, or marsh, esp. one that is part of an inlet or backwater" -*Webster's New World Dictionary* ["slough," in this case, is pronounced, "slew"].

areas where water sometimes stands and where vegetation requiring moist conditions grows but located miles from a navigable waterway are not wetlands within the meaning of the Clean Water Act."

In *United States v. Larkins*, 852 F.2d 189 (Ky 1985), the U.S. brought action seeking a permanent injunction against defendant for future violations of the Clean Water Act. The court ruled that, "presence of vegetation that requires saturated soils for growth, on land adjacent to a navigable body of water is sufficient to bring the land in question under the Clean Water Act definition of wetlands. Silviculture, exception to permit requirement of the C.W.A., applies to normal harvesting of trees, and not to activities of clearing timber to permanently change the area from wetland into non-wetland agricultural tract for row crop cultivation."

In the 1986 Idaho case of *Bailey v. United States By and Through U.S. Army Corps of Engineers*, 647 F.Supp. 44, property owners brought suit against the Corps seeking declaration that their property was not a wetland under jurisdiction of the Corps. The court held that, "there is no requirement that an area be saturated at the surface to be characterized as a wetland. The fact that the wetlands may have been artificially created did not negate the Corps' power to assert regulatory authority over them."

Property Rights and Ownership

In *MacNamara v. Kissimmee River Valley Sportsmen's Association*, 648 So.2d. 155 (Fla. 1994), the Sierra Club Legal Defense Fund (SCLDF) brought suit on behalf of a local sportsmen's group in Florida when a group of landowners fenced off part of a swamp and island in the Kissimmee River declaring it their property. The claim was based on deeds, surveys, long term payment of taxes, and permits from various governmental agencies that assume private ownership of littoral marshes. The Florida appeals court held that the marshes, swamps and wetlands bordering the state's navigable lakes and streams are public waters and not the property of private landowners. The court relied upon SCLDF's theory that the legal boundary of navigable lakes and streams is not their ordinary or average water level, but rather the full reach of the water during the rainy season.

In the 1997 Rhode Island case of *Alegria v. Keeney*, 687 A.2d. 1249, that state's supreme court held that the denial of a developer's application to alter wetlands was not a "regulatory taking" of land which required just compensation. The court held that there was no proof of a "total taking" because the land still had some development value. The developer purchased the property knowing that its wetlands were subject to pervasive state regulation and as such any investment-backed expectation to develop the property as though the wetlands were not present was unreasonable.

Wetland Alteration by Landowner

In the case of *Stoeco Development, LTD. v. Dept. of Army Corps of Engineers*, 710 F.Supp. 1075 (N.J. 1988), the Corps of Engineers

sought to assert jurisdiction over about 17 acres of privately owned land in New Jersey which allegedly contained federally regulated wetlands. In this case the court held, "omission of lands from the USACE administrative record wetlands map did not render the administrative record of wetlands incomplete within the meaning of the Clean Water Act. The Corps' granting of permit to dredge wetland area did not preclude them from not allowing the dredged wetland material to be retained in or placed in the wetland."

In the Colorado case of *United States v. Telluride Co.*, 849 F.Supp. 1400 (1994), the U.S. brought suit seeking injunctive relief and civil penalties against the Telluride Company (Telco) for violating Section 404 of the C.W.A. The U.S. alleged that Telco illegally filled 44.5 acres of wetlands without a permit during expansion of a ski area and construction of a residential area, golf course, and parking lot. The U.S. filed a consent decree proposing a full settlement the same day the suit was filed. The proposed decree would have prohibited Telco from any future discharges at the site that would violate the C.W.A., required Telco to restore 15.43 acres of wetlands at the ski area, construct 26.5 acres of new wetlands at a site approximately 60 miles from Telluride, monitor the constructed site for at least three years, pay civil penalties of \$143,000, and complete an additional off-site preservation project estimated at \$42,000. The court denied the consent decree and ruled that it was not "fair, reasonable and adequate, or in the public interest." The court stated that the decree was not developed in a procedurally or substantively fair manner, was of questionable technical adequacy, and may not fully compensate the public for the alleged violations. The court questioned the Environmental Protection Agency's "reasoned decision making" in developing the decree, relying heavily on public comments rather than deferring to agency and administrative expertise.

In the 1994 New Jersey case of *MOG Associates et al. v. Department of Environmental Protection*, 278 N.J. Super. 108, a builders' association, and six individual developers successfully challenged state wetlands regulations that voided all transition areas exemptions as part of the New Jersey Department of Environmental Protection's assumption of jurisdiction over the federal freshwater wetlands program. The appellate court held that the regulations were inconsistent with the state's Freshwater Wetland Protection Act, intended to exempt projects which have been approved by local planning or zoning boards prior to the effective date of the act, unless federal regulations conditioned the state's assumption of the federal program upon voiding those exemptions. In approval of the state program, the EPA had made it clear that the state had to void exemptions for construction in wetlands in order for the state to assume administration of the federal program. The EPA also indicated that it has no interest in the state's wetland transition area requirements since the federal program does not regulate buffer zones.

In a ruling which has potential impact for the Bootheel area of Missouri, a U. S. court of appeals held, in the case of *Camel-by-the-*

Sea v. Transportation Department, 95 F.3d 892 (1996), that the environmental impact statement (EIS) prepared for a highway construction project in Southern California was deficient. It reached this ruling because the studies relied on by the agencies to draft the EIS did not anticipate the formation of new wetlands produced by earthquakes within the highway construction area.

The Bootheel area of Missouri is part of a large alluvial plain that was characterized by forested swamplands until early in the 20th Century. This same area also is characterized by geologic instability, with major earthquakes occurring early in the 19th Century. Because it was previously a wetland area and because future earthquakes might have the potential to produce new wetlands, this California ruling may someday be applied in Missouri.

PROTECTION FROM WATER

Human interaction with water generally takes two forms: The use of "wanted or needed" water and protection of property from "unwanted" water. The unwanted water usually is either overflow water from streams and rivers (floodwater) or excess amounts of diffused surface water (surface run-off before it enters a watercourse or channel). This section deals with the means, and limitations on those means, which property owners have at their disposal to protect their property from those unwanted amounts of water.

DIVERSION OF WATER

Diversion of water may take two entirely different forms, stemming from two different riparian actions. It may encompass the "collection or re-routing" of water from a watercourse or surface waters to suit a water supply need, as well as the "casting off" of unwanted surface waters and prevention of inundation by overflow or flood water to suit a land use need. The first is to increase the quantity of usable water available to the riparian owner at a given point on a watercourse, such as an impoundment, with the second, for example, stemming from the need for protection from unwanted water so as to prevent surface water from inundating riparian lands along a watercourse, through the use of levees and embankments. Both are compounded by the fact that the acts of one riparian landowner may affect adjoining landowners, quite often in adverse ways. Diversion of watercourses is closely related, under case law, to dams and reservoirs. The diversion of water may be either an intentional act or an unintentional result. Either surface water or watercourses may be diverted, with different rights and legal restrictions applying to each. Both, however, are similar in that the doctrine of reasonable use applies to each. The distinctions are discussed in the cases below.

Practically all the Missouri law dealing with diversion of water is civil law (case law, common law, and equity) and focuses upon the rights and obligations of riparian owners. Diversion of water occurs by one of two means, naturally or artificially. Natural diversions of

¹Davis, P.N., "Missouri," in Beck, ed., *Water and Water Rights*, p. 459.

watercourses include accretion (the gradual accumulation of sediment to a watercourse's shoreline) and avulsion (the abrupt change in the path of a watercourse). (See *Boundaries and Interstate Waterways*)

Artificial diversions include all man-made obstructions, generally being thought of as dams or fill material (either impoundments or low-water dams) which are placed in a watercourse or surface water drainage channel. Diversions may, however, include bridges or embankments that impede the flow of a watercourse. Surface water may also be diverted, to supply water to a pond or lake or to protect buildings or lands from damage or erosion. Surface water diversions are most often artificially created.

One statute addresses "diversion" of water, used for water supply. Section 577.150, RSMo, forbids the diversion of a natural spring, brook, or other water supply, once it has "been taken for use" by any person.

Because of the complexity of the issue of artificial water diversion, the following cases are grouped into three separate concept areas, the first being riparian diversion of a watercourse, the second being the riparian diversion of surface water, and the third, diversion of water from a navigable watercourse which falls within federal jurisdiction under the Commerce Clause of the U.S. Constitution.

Diversion and Obstruction of Watercourses

The obstruction of a watercourse that causes upstream flooding is a violation of riparian rights, as is making modifications to the channel of a watercourse which results in stream bank erosion.¹ Obstructions which do not cause damages to other riparians' properties, infringe upon other riparians' rights, or violate statutory law, are allowable since no standing would exist to bring a civil suit in a court of law.

According to Section 244.010, in the chapter of Missouri Statutes on private drainage rights, the owner of land has the right to drain or protect his land for sanitary or agricultural purposes by the use of ditches to any outlet. The landowner's statutory right to drainage includes the crossing of other lands, if necessary. If a ditch must be dug through someone else's property, compensation must be paid for the land needed for construction and maintenance.

This statute was the basis for a civil suit in 1974, *Dudley Special Road Dist. v. Harrison*, 517 S.W.2d 170 (Spr. Mo. App.). The court held that it is unlawful for a downstream landowner to obstruct a creek which was a natural watercourse so as to cause the waters to overflow, and encroach upon and inflict damage to the land of the upstream landowner. Liability for damages resulting from obstruction is not based upon intent but rather the fact that the obstruction caused damage as a result of overflow waters. The holding continued, the Missouri statute which provides for drainage for agricultural or sanitary purposes does not give downstream landowners the right to obstruct a natural watercourse to the damage of the upstream landowners who, under the same statute, had the right to drain their land into the natural watercourse.

In the case of *Bird v. Hannibal and St. Joseph Railway Co.*, 30 Mo. App. 365 (1888) an artificial obstruction was placed in a natural waterway resulting in flooding of another's property. The court held that the construction of an embankment obstructing a natural waterway, with a defective and insufficient outlet, causing overflow onto another riparian owner, was not allowable. As further clarification, the court reasoned that it made no difference whether the overflow of the stream was a result of melting snow or falling rains.

The court held in the case of *Gray v. Schriber*, 58 Mo. App. 173, (St.L. App. 1894), the owner of agricultural lands is permitted to secure proper drainage for his land for agricultural purposes by constructing drains into any natural depression which carries the water into a natural watercourse, with the owner of the adjoining lower tract not having the right to obstruct the depression so as to prevent the drainage. It is not entirely clear whether the court saw the "natural depression" as a part of the watercourse or simply as a path for diffused surface water.

Missouri courts have fairly consistently held that one who obstructs or diverts the waters of a stream are liable for the resulting damages suffered by another. The case of *Webb v. Carter*, 98 S.W. 776 (St.L. Mo. App. 1906), dealt with the obstruction of a natural watercourse which resulted in injury to another landowner. Here, the court found in favor of the injured landowner, holding, "one may recover damages resulting from the obstruction of a natural watercourse, however carefully the obstruction may have been made."

Wood v. Craig, 133 Mo. App. 548, 113 S.W. 676 (1908), also involved diversion of a natural watercourse, which resulted in the flooding of another's land. The court held that "the dominant proprietor may divert the water from its usual channel, but if it is returned to the same channel before it reaches the land of the next proprietor below, no one can complain, the rule will not justify one in so diverting the stream, though the change is made altogether on his own land, as to cause it to discharge on or overflow onto the land of a lower proprietor."

In 1938, the Missouri court of appeals, in *Evans v. Massman Const. Co.*, 122 S.W.2d 924 reasoned that, "in the absence of protection of authority of government, or the legal authority of the state or one of its political subdivisions, no one has the right to dam up or obstruct a [navigable] running stream and thereby cause it to overflow its banks to the damage of riparian owners."

Modifications to a streambed which results in erosion damage to another's property was the basis of *Jacobs v. Frangos*, 329 S.W.2d 262 (St.L. Mo. App. 1959). In its decision, the appellate court held, "One may not obstruct or divert natural flow of stream without liability for ensuing damage to others."

The 1959 case of *Corrington v. Kalicak*, 319 S.W.2d 888 (St.L. Ct. App.), involved liability for damages for causing overflow of water of a natural watercourse as a result of an obstruction. The court

² This holding follows the reasoning first developed in *Beauchamp v. Taylor*, 111 S.W. 609 (Mo. App. 1908).

reasoned that the liability for the action "is not based upon intention to obstruct the water, nor the mere impounding of waters, but rather on the ground that obstruction causes water to overflow, encroach upon and inflict special damage to property of another. Therefore, the agency obstructing the flow and causing the overflow is liable for misfeasance in an action of trespass, whether impounding waters is intentional or accidental, or whether overflow is caused by negligence or without negligence."

Rector v. Tobin Construction Co., 351 S.W.2d 816 (St.L. Ct. App. 1961), dealt with the obstruction or diversion of a watercourse which resulted in flooding. "The flooding of another's land by blocking a stream constitutes a trespass," wrote the court. A trespass carries with it liability for damages regardless of fact that the defendant was engaged in public work when the trespass was committed.

Hackensack Water Co. v. Nyack, 289 F. Supp. 671 (S.D.N.Y. 1968), addressed interstate water and individual riparian rights. Though this is a New York case, it is important because of the extensive reasoning and explanations which the court offered. The court held that, "under both New Jersey and New York common law (both being riparian states), upstream riparian owner may not unreasonably divert or appropriate waters of flowing streams, riparian owners must restore all flowing waters to stream subject only to reasonable allowance for domestic use and consumption. 'Diversion,' as applied to watercourses, is the taking of water from a stream without returning it for the use of lower riparian owners. The riparian landowner whose land is contiguous to a natural watercourse may withdraw water from the watercourse for agricultural, industrial or other uses on his land provided he returns it in substantial volume to the watercourse stream. All proprietors of a stream have equal right to use water and share in the benefits gained from such use. Artificially increased flow of a stream is a factor which must be considered when determining whether an upstream owner's use is reasonable. A grant by New York to divert water without making compensation to a lower riparian owner (N.J. water company) is an unconstitutional taking of the lower riparian owner's property."

The court determined, in the case of *Kelso v. C.B.K. Agronomics, Inc.*, 510 S.W.2d 709 (1974), that any obstruction of the flow of water in a natural watercourse, including bridges, resulting in injury to another person furnishes the injured person a right of action, no matter how carefully the obstruction might have been made.²

Diversion of Surface (Drainage) Waters

Missouri courts have viewed the riparian landowner rights and obligations which attach to watercourses differently than those involving surface waters. Watercourses flowing across land ownership boundaries are subject to reasonable use in that the riparian landowner may not unreasonably diminish the quality or quantity of the stream, nor can he cast greater quantities of water into the stream to the injury of other riparians. With regard to surface water, it appears

that the courts permit the landowner to gather, retain, and use at his pleasure the surface water which is available within the landowner's property boundaries, so long as it is not then cast onto the land of another in force, resulting in injury to the property of the other owner. Missouri currently follows the "reasonable use" doctrine, as enumerated in *Heins*. The landowner's expectations in and right to use surface waters may be a topic for future court discussions.

The 1993 case of *Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n.*, 859 S.W.2d 681 (Mo. 1993) impacts previously held judicial reasoning as well as providing guidance on the rights of the landowner to ward off unwanted surface water. In *Heins*, the court refined the distinctions of floodwaters and drainage waters, and overturned the common enemy doctrine in favor of the comparative reasonable use doctrine for surface waters. In its decision, the court wrote: "The Missouri Supreme Court adopts rule of reasonable use, rather than common enemy doctrine, to govern disputes involving diversion of surface waters, as rule most likely to promote optimum development and enjoyment of land, while ensuring equitable distribution of costs among competing interests at hand. Reasonableness of interference with flow of surface waters under rule of reasonable use is question of fact, to be determined in each case by weighing gravity of harm to plaintiff against utility of defendant's conduct. Reasonableness is the vital concept of the common law³ and already governs the rights of users of watercourses, underground streams, and underground percolating waters."⁴

³ *City of Franklin v. Durgee*, 71 N.H. 186 (1901).

⁴ *Bollinger v. Henry*, 375 S.W.2d 161 (1964), *Higday v. Nickolaus*, 469 S.W.2d 859 (1971).

Pre-Heins: Common Enemy Rule

The following cases are representative of the approach the courts took in applying the common enemy rule in Missouri before 1993 when the cases of *Heins* and *Campbell* were decided. The 1874 case of *McCormick v. Kansas City, St.J. & C.B. R.R.*, 57 Mo. 433, dealt with drainage of surface waters and resultant damages to adjoining land. While the common enemy doctrine was in force during the time that this case was decided, the court did caveat its decision by stating: "Drainage of surface waters by railroads must be accomplished with reasonable care. While the railroad company has the right to drain surface water from its road bed, so as to protect its interests, it must be done in a manner so as to occasion no unnecessary inconvenience or damage to adjoining proprietor."

The early 20th Century case of *Mehonray v. Foster*, 132 Mo. App. 229, 111 S.W. 882 (1908) held that under the "common enemy" rule, a landowner may build on or alter the surface of his land to prevent surface water from coming upon his land from higher land and it does not matter that the embankments cause water to form ponds or collect on the lands of the upper owner. This decision was affirmed four years later in the case of *Walther v. City of Cape Girardeau*, 166 Mo. App. 467, 149 S.W. 36 (1912).

The common law rule that surface water is a common enemy which every landowner may resist was reinforced again by the court in the case of *Place v. Union Township*, 66 S.W.2d, 584 (1933). But

this court holding stated that a landowner is not liable for damages caused by diversion [of surface water]... incidental to improvement of land, provided he does not proceed negligently. This is an early recognition of some responsibility on the part of the landowner. Opinions rendered in cases such as *Place* introduced into jurisprudence the concept that the common enemy doctrine must not be exercised recklessly or negligently, to the damage of other riparians. This led to the doctrine being termed the "modified common enemy doctrine."

The court found in the case of *Casanover v. Villanova Realty Co.*, 209 S.W.2d 556 (St.L. Mo. App. 1948), a landowner may use his land in any lawful manner for any lawful purpose, and has the right to alter grade or slope of land in absence of contrary legal restriction. Alteration of grade and removal of ground cover imposes no liability on upper owner for resulting damages to lower owner since upper owner's land is above lower owner's, prior to the change in grade. Common law treats surface waters flowing from higher ground to lower lands as common enemy and permits one to protect his property by whatever means available, however the owner of the higher land cannot unnecessarily collect surface water thereon and then cast it onto lower land. The pumping of water onto a lower lot from a higher tract and the pushing of loose earth onto another lot by means of machine grading are, however, acts of trespass. The flow of surface waters, including mud and silt from the higher to the lower tract which damages the property of the lower constitutes an act of trespass.

Behm v. King Louie's Bowl, Inc., 350 S.W.2d 285 (K.C. Mo. App. 1961) discussed the modified common enemy doctrine of drainage of diffused surface waters. Diffused surface waters were collected and discharged by upper owner as a result of their interference with natural drainage causing it to flow onto and flood property of lower owner. Surface waters are a common enemy which may be discharged onto a lower owner provided it is not collected and discharged, thereby causing damage to another. Upper owner may not discharge water in manner different than that which would have been usual and ordinary in natural watercourse drainage.

Perhaps the best "common enemy" statement is found in the case of *Young v. Moore*, 236 S.W.2d 740 (Spr. Ap. 1951), in which the court cited the earlier case of *City of Hardin et al. v. Norborne Land Drainage District of Carroll County et al.*, as precedent. The opinion stated, "This has always been the rule in Missouri and we have always followed the common law doctrine that surface water is a common enemy, and that each land proprietor may ward it off though by so doing he turns it on his neighbor." However, this same court opinion stated that "the rights given under the 'common enemy' doctrine must be exercised within reasonable limits and not recklessly, so as not to needlessly injure the servient tenements" [lower land holdings]. This case shows a "softening" of the otherwise harsh common enemy doctrine, interjecting the concept that the entitlement of self-protection under that doctrine must be exercised with care.

In *Happy v. Kenton*, 362 Mo. 1156, 247 S.W.2d 698 (1952), the court held that one may not obstruct a natural watercourse without liability for ensuing damages to others, but one may treat surface waters as common enemy and obstruct their flow without liability so long as it is done reasonably and not recklessly or negligently. A natural drainway, improved by an artificial ditch, which follows exact course of natural drainway and under circumstances indicating that ditch is to be permanent, which combination thereafter meets requirements of natural watercourse, should be treated as a natural watercourse.

In *Blydenburgh v. Amelung*, 309 S.W.2d 150 (K.C. Ct. App. 1958), the court held that an upper riparian may not collect diffused surface waters and divert them in volume to the property of a lower riparian.

In *Haferkamp v. City of Rock Hill*, 316 S.W.2d 620 (1958), the court wrote that under the common enemy doctrine, stated in its extreme form "as an incident to his right to use or own property as he pleases, each landowner has an unqualified right, by operations on his own land, to fend off surface waters as he sees fit without being required to take into account the consequences to other landowners, who have the duty and right to protect themselves as best they can."

The case of *Peters v. Shull*, 379 S.W.2d 837 (K.C. Ct. App. 1964), involved construction of an artificial impoundment and discharge of water onto adjoining landowner's property, the drainage of diffused surface waters, and constructed changes to the surface gradient resulting in damages to another's property. The court held that the owner of a dominant estate cannot permit surface water to artificially collect on his premises and then discharge it in destructive quantities at one point in a body onto the servient estate. A landowner may, in the reasonable use and development of his land, drain it by building thereon sewers, gutters and other such artificial water channels for the purpose of carrying off surface waters into a natural surface water channel located on his property without liability to his neighboring landowner, provided he does not exceed the natural capacity of the drainway to the damage of the neighboring property.

The "common enemy" doctrine does not provide a way out of every property damage law suit resulting from surface water runoff. The case of *Wells v. State Highway Comm'n*, 503 S.W.2d 689 (Mo. 1973), dealt with a situation where soil eroded from a highway construction site and was deposited in a lake, to the damage of the lake owners. The Highway Commission claimed that the drainage water was subject to the common enemy doctrine. The court held that the mud which ruined the lake constituted a taking, entitling the land owners to a recovery, and that the Commission could not apply the common enemy doctrine in this situation.⁵

In 1980, in the case of *Senkevech v. Vaughn*, 610 S.W.2d 399, the courts held that a landowner has the legal right to construct open ditches to drain or to protect the property which he owns.

The case of *M.H. Siegfried Real Estate v. City of Independence*, 649 S.W.2d 893 (Mo. 1983), posed a question of liability of a lower property owner for impeding the flow of surface water from an up-

⁵ The court specifically overturned the common enemy ruling cited in *Casanover v. Villanova Realty Co*, 209 S.W.2d 556 (1948).

per property. The court determined that liability cannot be imposed upon lower owner when no water is brought upon the upper owner's land which would not otherwise have flowed there.

Looney v. Hindman, 649 S.W.2d 207 (Mo. 1983), addressed drainage water subject to common enemy rule with consideration for "due care" and "collection and discharge." The "modified common enemy" concept of surface water gives lower, or servient owners considerable freedom in blocking the flow of the surface water onto their land from upper lands, but in certain situations, places substantial restrictions of the rights of the upper owners who seek to cast surface waters onto lower lying properties. The collection and discharge of surface waters onto a servient estate, to its damage, is actionable when such collection and discharge exceeds the eventual capacity of the drainways.

The three following cases are representative of the common enemy doctrine just before that rule was overturned by the Missouri Supreme Court in *Heins*. These cases show the judiciary moving away from a strict interpretation of the common enemy rule and towards comparative reasonable use.

In *Haith v. County of Atchison*, 793 S.W.2d 151 (Mo. App. 1990), the court addressed drainage waters subject to the common enemy rule. The court held that Missouri follows a modified "common enemy doctrine" in respect to surface waters. Under this doctrine each landowner has an unqualified right to fend off surface waters, however, this does not include the unnecessary collection of surface waters and subsequent discharge at one place, thereby creating damage to his neighbor. The court, to distinguish between surface waters and watercourses went further by restating the characteristics of each. A "natural watercourse" is a living stream with defined banks, channel and bed, though it need not run with water continuously, it must be fed from other and more permanent sources than mere surface water. Ditches constructed to drain off surface water are not themselves "watercourses," which may be legally obstructed, by both fact and law, by the owner, but absent that the ditch is fed by any source of water other than surface water.

The case of *Hansen v. Gary Naugle Constr. Co.*, 801 S.W.2d 71 (Mo. 1990) also dealt with drainage waters as subject to the common enemy rule. The modified common enemy doctrine defeats trespass and nuisance causes of action by lower owner for damages caused by surface water runoff unless lower owner shows that upper owner diverted flow of surface water runoff out of its natural drainway or caused accumulation of surface water runoff in such a way as to permit its discharge to exceed capacity of natural drainway. The upper owner may collect surface water on his property in artificial drains and precipitate it into natural drainway channel even though in doing so the flow of the surface water in its natural channel onto the lower lands may be increased and accelerated.

In *Millard Farms, Inc. v. Sprock*, 829 S.W.2d 1 (Mo. App. 1991), one of the last cases to apply the modified common enemy doctrine, the court addressed accumulation and discharge of drainage waters

onto adjacent property. Under the modified common enemy doctrine, a landowner may obstruct drainage of surface water that does not flow through a natural watercourse, without liability for damages, so long as landowner does so reasonably, without recklessness or negligence, even if obstruction causes water to collect on adjoining property. Surface water draining through a slough or depression, which does not receive water from any other sources other than rain, sleet, snow or other surface water, is not a natural watercourse, and therefore, a lower land owner could treat that surface water as a "common enemy" and obstruct its flow with a dam. The court here held that "under common enemy doctrine, a lower landowner need not establish good motive or good cause for blocking flow of surface water." This point, when viewed with respect to the *Heins* decision, is probably no longer valid.

Post-Heins: Reasonable Use Rule

The following two cases expanded and applied the comparative reasonable use rule stated in *Heins*. They also represent the courts' attempts to utilize reasonable use as a basis for fixing and awarding damages to injured parties.

The case of *Kueffer v. Brown*, 879 S.W.2d 658 (Mo. App. 1994), confirmed the extension of the comparative reasonable use rule to include flooding from embankments and excessive discharge of surface water into drainways. An upper landowner brought suit for trespass against a lower property owner, and the lower owner counter-claimed for flood damage allegedly caused by a diversion of excess surface water by the upper property owner. Here, the court found that the law of nuisance acknowledges and accommodates two conflicting rights: the right of property owners to control and use their land for personal benefit and interest; and the right of the public and adjoining landowners to prevent unreasonable use which substantially impairs their peaceful enjoyment of their land. "Nuisance liability can be imposed on actions stemming from unreasonable use of a watercourse as well as unreasonable use of surface water," wrote the court. "Under [the] modified common enemy [doctrine], the upper owner's collection and diversion of surface water into a natural swale onto the lower's property, in excess of the swale's natural capacity, is an unreasonable use under both nuisance and negligence theories."

The court, in the case of *Colbert v. Nichols*, 935 S.W.2d 730 (1996), enjoined the defendant from blocking a surface water drainage ditch in which the plaintiff held prescriptive usage rights. Upper landowner with prescriptive drainage rights onto defendant's property brought suit to enjoin the lower landowner from obstructing the flow of a drainage ditch. Lower owner brought counter suit seeking damages for alleged trespass and destruction of property. The court held that the upper landowner did have the prescriptive right to drain water into a drainage ditch crossing the property of the lower landowner. The lower property owner could alter the flow in the ditch or change its direction of flow across his land but not to the extent that it would

⁶ Davis, P.N. , *Recreational Use of Water-courses*, p. 76.

⁷ Davis, P.N. , *Recreational Use of Water-courses*, p. 78.

⁸ The right to use and enjoy property vested in another.

⁹ Something tangible which can be inherited—for example, the right to use water flowing across one's own land.

cause less water to travel through the ditch. An injunction by the lower court was upheld against lower landowner from erecting an obstruction on his land because it correctly followed the doctrine on reasonable use, in that the obstruction interfered with the upper property owner's easement and would cause flooding on his land.

Diversion of Water from a Navigable Watercourse under Federal Jurisdiction

Under the Commerce Clause of the U.S. Constitution, the federal government has authority to regulate navigation on interstate and federal navigable waters and, in doing so, may impose any condition or require removal of any man-made or natural structure for the purpose of improving or maintaining navigation.⁶ Pursuant to its power of navigational servitude, the federal government is not required to pay compensation to individuals for any adverse effects to private rights or private property resulting from its exercise of power over navigational regulation because private interests are seen as subservient to the public right of navigation.⁷

With regard to diversion of water from a navigable watercourse, the U.S. Supreme Court ruled, in the case of *Economy Light Co. v. United States*, 256 U.S. 113 (1921), "artificial obstructions of navigable waters rendering them non-navigable in fact do not render them non-navigable under the law. A river may be navigable in law though it contain natural obstructions and not open to navigation at all seasons or stages of water. A decision of a state supreme court holding that a river is non-navigable does not bind the United States to the holding if it was not a party to the suit. A river having actual navigable capacity in its natural state, and capable of carrying commerce among the states is within the power of Congress to preserve for purposes of future transportation even though the river is not used for commerce and is incapable of being used for commerce as a result of artificial obstructions."

The U.S. Supreme Court addressed federal jurisdiction and riparian power company rights in *F.P.C. v. Niagara Mohawk Power Corp.*, 347 U.S. 239 (1954). The court held that the federal Water Power Act of 1920 did not abolish private proprietary right, existing under state law, to use waters of a navigable stream for power purposes. Water rights claimed by a licensee are usufructuary⁸ rights to use the water for the generation of power, as distinguished from claims to the legal ownership of the running water itself, and constitute a form of real estate known as corporeal hereditaments.⁹ There is a dominant servitude, in favor of the United States, under which private persons hold physical properties obstructing navigable waters of the U.S. and all rights to use the waters of those streams, but the exercise of that servitude, without making allowances for pre-existing rights under state law, requires clear authorization. Riparian water rights, like other real property rights, are determined by state law.

FLOODS AND FLOODING

For over 100 years, Missouri subscribed to the common enemy rule when dealing with flood and drainage waters. In 1993, the year of record floods on the Missouri and Mississippi rivers, two landmark cases¹⁰ replaced the common enemy rule with the comparative reasonableness rule as applied to drainage and flood waters.¹¹ Under Missouri court definition, waters which have overflowed or otherwise left a watercourse and are flowing beyond the banks of the stream or watercourse are floodwaters. Drainage water, on the other hand, is defined as water outside the channel of a watercourse or as water flowing across the surface of the ground prior to its joining with a watercourse.¹² Missouri has historically applied the common enemy rule to both floodwaters and to drainage waters, both falling within the broad classification of surface waters.¹³

Case Law - Flooding

Missouri courts originally subscribed to the "common enemy" doctrine when addressing the rights of landowners to protect themselves from flooding, with flood waters being treated as diffused surface waters rather than an extension of a watercourse.¹⁴ Under "common enemy," the landowner was basically free to use any method to protect his land from surface water, even if it was to the detriment of his neighbor.

This rule evolved into the "modified common enemy" doctrine which still allowed for any method to be used to protect one's property from diffused surface waters, but only so long as the methods were not reckless or negligent. Under "modified common enemy," the courts attached liability for damages when one's actions, in protecting their property, damaged another.

In 1993, the Missouri Supreme Court overturned the common enemy variations governing drainage water in favor of "reasonable use," in the case of *Heins*.¹⁵ The court based this change on several reasons – literal application of the common enemy doctrine caused undesirable and unintended results, modifications to the doctrine had moved toward reasonable use, the reasonable use doctrine had already been adopted by Missouri courts for streams and groundwater, most other riparian states had switched to the comparative reasonable use rule, and it considered the reasonable use rule as more apt to promote the greatest beneficial use and enjoyment of one's own property while guaranteeing the same for adjacent landowners.¹⁶

As *Heins* applied comparative reasonableness to drainage water, *Campbell* applied comparative reasonableness to floodwaters. *Campbell* provided that landowners, in repelling floodwaters, cannot do so in a manner which unreasonably interferes with the neighboring landowner's use of his land. The decision reached in *Campbell* applied the rule of comparable reasonableness retroactively to floodwater cases arising before the rule's adoption; in the case of *Heins*, however, the court did not indicate if the ruling would affect the lo-

¹⁰ In August, the Missouri Supreme Court decided *Heins Implement Co. v. Missouri Highway & Transportation Comm'n* 859 S.W.2d 681 (1993), and in October, the Missouri Court of Appeals decided the case of *Campbell v. Anderson* 866 S.W.2d 139 (1993).

¹¹ Davis, P.N., "Law of Repelling Floods in Missouri", p. 127.

¹² Davis, P.N., "Law of Repelling Floods in Missouri", p. 127.

¹³ *Schalk v. Inter-River Drainage Dist.*, 226 S.W. 277 (1921), and *Anderson v. Inter-River Drainage & Levee Dist.*, 274 S.W. 448 (1925).

¹⁴ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 458.

¹⁵ *Heins Implement Co. v. Missouri Highway & Transportation Comm'n.*, 859 S.W.2d 681 (Mo. 1993).

¹⁶ Davis, P.N., "Law of Repelling Floods in Missouri," p. 130.

¹⁷ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, pp. 467-68.

¹⁸ Davis, P.N., "Law of Repelling Floods in Missouri," pp. 130-31.

cation of levees or the repair of pre-*Heins* levees. The modified common enemy rule of liability for damages remained in place when Missouri switched to the comparative reasonable use rule of floodwaters.¹⁷

The case of *Campbell v. Anderson*, 866 S.W.2d 139 (Mo. Ct. App. 1993) involved the rechannelization of a creek by adjoining land owners, and in its decision, the court applied the comparative reasonable use rule to floodwaters. The court held that, "where the rechannelization of a creek creates a temporary structure, and the rule of reasonable use is applicable to surface water runoff providing that each possessor is legally privileged to make reasonable use of his land, even though flow of surface waters is altered thereby and causes some harm to others, interference is acceptable, until the harmful interference with flow of surface waters becomes unreasonable."

The practical effects of the *Campbell* decision were to abolish the rule of non-liability for one's own actions that had been created under the common enemy doctrine (including the design, siting and construction of new levees), and to bring all surface waters uniformly under the same rule that applied to watercourses and groundwaters.¹⁸

Pre-Campbell: Common Enemy Rule

The following cases are included to provide a background and an historical understanding of how Missouri civil law addressing floodwaters has evolved over the years.

In *Abbott v. Kansas City, St.J. & C.B.R.R.*, 83 Mo. 271 (1884), the court reasoned that "unless authorized by lawful authority, one cannot interfere, to any material extent, with the waters of a running stream. When lawful authorization is present, a person is liable only in case of negligence for damage to property as a result of construction activities which interfere with the normal flow of a creek, and not the warding off of diffused surface waters."

In *Goll v. Chicago & Alton Railway Co.*, 271 Mo. 655 (1917), the court held that overflow water from streams and rivers is surface water. The owner or person in possession has the right to prevent the waters of the Missouri River from overflowing his land, provided he does not, by his own embankment or other construction on his land, change the channel of the river.

The court, in *Schalk v. Inter River Drainage Dist.*, 226 S.W. 277 (1921), restated that surface water is a common enemy, and said that waters overflowing the banks of a stream during flood and spreading over bottom land is surface water.

In *Keener v. Sharp*, 341 Mo. 1192, 111 S.W.2d 118 (1937), the court reasoned that, "Waters overflowing the banks of a river during a flood or freshet and spreading out over the bottom lands is 'surface water' which an owner can ward off his land and throw on land of adjoining owner."

As can be seen from this decision, the common enemy doctrine was in effect at the time of this decision. A softening of the strict

common enemy rule towards a modified common enemy doctrine took place in about the middle of the 20th century, continuing until 1993 when the common enemy concept was replaced by the reasonable use rule.

Atchison, T. & S.F. Ry. v. Taylor, 87 F.Supp. 313 (E.D. Mo. 1949), defined floodwater, affirmed use of levees to repel floodwater, and affirmed common enemy doctrine. This case involved liability for flood damage caused by a railway (the railway's liability for flood damage caused by railway right-of-way which in and of itself may be at odds with liability for passengers and customers of the railway). The court held that the railroad need not go to extraordinary measures to escape liability of building railway in flood prone area. Landholders may repel surface water irrespective of resulting harm, so long as the measures taken are reasonable and prudent.

Blackburn v. Gaydon, 245 S.W.2d 161 (1951), dealt with floodwaters, and applied the common enemy doctrine. The court disallowed dams, dikes, or other improvements to a property to ward off flood waters which cause the water to be collected and then cast in a concentrated form to the land of another in a manner in which the waters would not normally flow.

In *Schulze v. Monsanto Co.*, 782 S.W.2d 419 (Mo. App. 1989), the court found that the "modified common enemy doctrine" applied to the action of an upper riparian landowner who improved and extended levees found on his property, which did not obstruct or divert natural water course, in that the levees did not take effect until flood stage, after river had overflowed its banks. Upper riparian landowner's control of river bank erosion and farmland flooding, by constructing levee and installing riprap and hard points along river, did not constitute an obstruction or diversion of natural water course so as to render upper landowner liable to lower riparian under trespass theory.

Brown v. H & D Duenne Farms, Inc., 799 S.W.2d 621 (Mo. App. 1990), addressed the use of levees to repel floodwaters under the common enemy doctrine. The court held that the law which applies to surface waters also applies to overflow water. A ditch may be a watercourse or a drain ditch, within the scope of the rule that one may not obstruct a natural watercourse without liability for ensuing damages to others, if ditch or channel serves purpose of natural drain or watercourse, even though ditch or channel was artificially constructed.

Statutory Law - Flooding

Statutory laws are typically forward-looking and broad-scoped, in that they address flood protection and include state approved flood control districts, an interstate compact, and authorization for the state to coordinate with the federal government. Chapter 278, RSMo, sets up the state Soil and Water Conservation Districts, and establishes Watershed Protection and Flood Prevention subdistricts. The relationships with the Curators of the University of Missouri and the Co-

¹⁹ There is no record that the Kansas State Legislature ever adopted a similar law.

²⁰ The designated agency for this purpose is MoDOT.

²¹ Municipalities have the police power to adopt regulations for participation in the NFIP, under municipal law and zoning law statutes, and so do not need the enabling legislation needed by counties.

²² RSMo Chapter 242.020.

²³ RSMo Chapter 245.010.

operative Extension Service are spelled out, and provisions of federal law (the Soil Conservation and Domestic Allotment Act of 1936) are accepted, including the purpose of "protection of rivers and harbors against the results of soil erosion in aid of maintaining the navigability of waters and water courses and in aid of flood control." The primary purposes of the districts, of course, are the conservation of soil and water, and the prevention of erosion by wind and water. Flood damage reduction often is a concomitant purpose (and result) of these kinds of projects.

The Kansas-Missouri Flood Prevention and Control Compact was enacted in 1985 by Section 70.327, RSMo, and includes the counties along the Missouri River from St. Joseph to Kansas City.¹⁹ This statute contains no expiration date or non-ratification clause.

Section 26.130, RSMo, authorizes the Governor to designate a state agency to represent the state in negotiations with federal government agencies relative to public works on rivers and harbors for flood control and other purposes.²⁰

Section 49.600 *et seq.*, RSMo, authorizes Missouri county commissions, in those counties not having planning or zoning, to adopt orders or ordinances necessary to participate in the National Flood Insurance Program (NFIP).²¹ The law states that levee districts are subject to flood plain management regulations adopted by a county pursuant to this chapter. In addition, Section 64.001, RSMo, reiterates the latter provision.

Storage of floodwaters is addressed in part by Section 256.435 *et seq.*, RSMo, the Multipurpose Water Resources Program, Water Supply and Storage Projects law of 1992. Water conservancy districts may be set up under the terms of Chapter 257, RSMo, for several purposes, including owning land and constructing engineering (flood protection) works. Watershed Protection and Flood Prevention are authorized by Sections 278.160 to 278.300, RSMo, part of the Soil Conservation Law. Subdistricts of a Soil and Water Conservation District may be formed under this statute, for carrying out projects which may be largely funded by federal revenues through the U.S. Department of Agriculture under Public Law (P.L.) 83-566.

DRAINAGE AND LEVEE DISTRICTS

Both statutes and cases provide for the creation of drainage districts, validating and defining their powers. Drainage and levee districts offer landowners organized protection from unwanted surface water. Simply stated, a drainage district is a legislatively authorized political subdivision of the state, empowered to collect and expend public funds to improve land drainage.²² A levee district is a legislatively authorized political subdivision of the state, empowered to collect and expend public funds to prevent lowlands from flooding.²³ Drainage districts usually build and maintain levees, and levee districts usually control drainage. Often a district will be organized for

both purposes. Because the powers, duties and objectives of levee districts and drainage districts overlap, they are discussed together in the following statutes and cases.

While nothing in Missouri water law would prevent landowners from organizing to build levees or cooperating in drainage projects, the logical reason why the General Assembly adopted statutes for the formal organization of drainage or levee districts was this: In order to protect large areas of flood plain from the overflow of waters, it often is necessary for many landowners to organize so that the large cost of construction and ongoing maintenance might be spread among the many landowners. The formal organization of a district in either the circuit court or the county commission, as an entity of government under statute, allows the collection of tax revenue for the purposes of capital construction and maintenance. This allows the costs of levee and drainage construction and maintenance projects to be spread equally among those who receive the benefits.

In addition, a continuing benefit of existing as a subdivision of the state is to qualify for the levee rehabilitation program of the U.S. Army, Corps of Engineers, following flood damage to a levee. This is a cost-share program, with 20 percent of the rehabilitation costs being borne by the levee-owner(s). Since 1987, per the *Engineering Regulations* issued by the Chief of Engineers, Corps of Engineers, there must be an organized entity like a levee district, or a city, or a road district, that has the power to tax the protected property owners for on-going maintenance expenses. The levee and drainage district laws of Missouri are enabling legislation for organized landowner cooperation to satisfy these two financial needs.

Usage of drainways is discussed in case law and the law applies to drainage and levee districts as well as individuals. What is reasonable under civil law for an individual to do to prevent flooding is more than likely also reasonable for a drainage or levee district. Conversely, what is unreasonable for an individual riparian landowner is probably likewise unreasonable for a drainage or levee district. A drainway is a place where water flows after precipitation, but does not have the legally defined characteristics of a watercourse. An upper landowner may discharge surface waters into a drainway provided that its natural capacity is not exceeded, and a lower landowner is obligated not to obstruct the drainway. Both upper and lower landowner must act in reasonable manners in their use of drainways.²⁴

Statutory Law - Drainage and Levee Districts

Title XV of Missouri Statutes covers Lands, Levees, Drainage, Sewers, and Public Water Supply. Within this part of the statutes, Chapters 242, 243, 244, 245, and 246 address levee and drainage districts in the flood-prone areas of Missouri, as discussed in the following. Missouri Law provides alternatives for the creation of both drainage and levee districts. Chapter 242, RSMo, provides for the judicial formation of drainage districts in circuit courts, and Chapter 243 cov-

²⁴ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 467.

²⁵ See *Benson v. Chicago & Alton R.R. Co.*; *Keener v. Sharp* (1937); *et al.*

²⁶ The concept that drainage districts are not considered to be landowners was overturned in *Anderson v. Inter-River Drainage & Levee Dist.*, 309 Mo. 189 (1925).

ers the organization of drainage districts formed under applications to county commissions. Chapters 242, 243, and 244 more especially relate to drainage. Statutorial-based private drainage rights are conveyed in Chapter 244 and cover private individual drainage rights for agricultural and sanitary purposes. Chapter 245, RSMo, specifically covers levee districts, both organized by circuit courts and by county commissions. The wording of these chapters governs organization, powers, and administrative details. Chapter 246 contains provisions relating to all drainage and levee districts with respect to fees, taxes, and management of funds. Sections 70.330 to 70.360, RSMo, allow cities of 100,000 or more people to cooperate in regard to levees, drainage, and sewerage. Section 64.001, RSMo, states that drainage and levee districts are subject to flood plain management regulations of the counties in which they are situated. Section 64.300 regulates sewers and ditches in certain first class counties that have a population of less than 700,000, requiring their enclosure in certain situations.

In addition, Chapter 241, RSMo, is the chapter on Swamplands, Islands, and Abandoned Riverbeds, which governs drainage (reclamation), duties of government officials to oversee statutory administration, and the private ownership of swamplands.

Case Law - Drainage and Levee Districts

As stated earlier, the objective of drainage and levee districts is organized protection from unwanted surface water, surface water being legally distinct and different from water in a watercourse.²⁵ Riparian rights stem from, and water usage rights attach to, land ownership. Levee and drainage districts serve to assist the landowner in the full legal use and beneficial enjoyment of his property.

Goll v. Chicago & Alton Railway Co., 271 Mo. 655 (1917), defined surface water overflow from streams and rivers. The court held that overflow water from streams and rivers is surface water. The owner or person in possession of the land has the right to prevent the waters of the Missouri River from overflowing his land, provided he does not, by his own embankment or other construction on his land, change the channel of the river.

The court held, in *Inter-River Drainage Dist. v. Ham*, 275 Mo. 384, 204 S.W. 723 (1918), "only a landowner, in the protection of his own property, may ward off floodwaters." The court also held that, "drainage districts are not considered landowners."²⁶

"Waters merely overflowing the banks of a stream during flood and spreading over bottom land is surface water," said the court in the case of *Schalk v. Inter River Drainage Dist.*, 226 S.W. 277 (Mo. 1921). "A natural stream can not be dammed up nor the water diverted from its beaten path. The cutting, by a drainage district, of a borrow pit into a river so as to lower the banks of the river three feet and thereby cause water to submerge lower lands, which would not be submerged otherwise is an unlawful diversion of the waters of a river from their channel."

In the case of *Sigler v. Inter-River Drainage Dist.*, 311 Mo. 175, 279 S.W. 50 (1925), the court allowed for the construction of dams, dikes or other construction by landowners to protect their premises specifically from overflow water.

Anderson v. Inter-River Drainage & Levee Dist., 309 Mo. 189 (1925) produced a decision contrary to *Inter-River v. Ham*, (*supra*). The case of *Anderson* dealt with drainage, levees, eminent domain, and protection from overflow waters. In this case, the plaintiff argued that water which overflowed his land was the result of a high levee. The court held that a drainage district on one side of a river is not liable for damages for injuries to somewhat higher lands on the opposite side of the river, which were outside the drainage district boundary. The court found that the drainage district did not obstruct the river channel or change the natural watercourse. "While the drainage district is not an individual landowner, it has power to drain swamps and overflow lands. It falls within the police powers of the state, as the drainage district is organized and authorized under statutes of a subdivision of the state," wrote the court.

In *City of Hardin v. Norborne Land Drainage Dist.*, 360 Mo. 1112, 232 S.W.2d 921 (1950), a new levee constructed by a drainage district was found not to change the original intent of levee district plans, nor provide new benefits, but rather sought to continue protection theretofore furnished by the original levee until subsequent external conditions rendered it insufficient in height and strength. The construction of a new levee was found simply to be maintenance and preservation of an old levee, and falls within the statutory powers granted to the levee district board of supervisors. Surface water is a common enemy and each land proprietor may ward it off though by doing so he turns it on his neighbor. A drainage district is a governmental agency exercising police powers and as such may fend off surface waters as a common enemy, in the protection of its own landowners, though water be turned on land of others outside the district.²⁷

²⁷ Common enemy doctrine overturned in favor of comparative reasonable use doctrine in *Heins v. Mo. Hwy. & Trans. Comm'n.*, (1993).

²⁸ The Comptroller General, *Improving The Safety Of Our Nation's Dams—Progress And Issues*, United States General Accounting Office, Washington, D.C., 8 March 1979, pp. 1-3.

WATER DETENTION AND RETENTION

Missouri statutory law regulates the safety of dams. Failures of large dams across the country from the 1930s to the 1970s motivated the federal and state governments to enact statutes and programs to ensure public safety. Dams may serve multiple uses, including flood control, recreation, power production and water supply. Dam failures, in other states, in the early 1970s, caused hundreds of deaths and extensive property damage and led to the passage of the 1972 National Dam Inspection Act. By 1977, the federal government was providing funds for federal and non-federal dam inspections.²⁸

Some dams are designed to retain water for long periods of time, and have controlled openings for water release. These are retention dams, and have permanent pools in their reservoir areas. Other types

²⁹ An acre-foot is the volume of water that would cover one acre of land to a uniform depth of one foot or 325,857 gallons.

³⁰ per Jim Alexander, Program Director, Dam and Reservoir Safety Program, 5 January 1998.

of dams may be designed only to detain water temporarily, such as when heavy rains occur, and stormwater runoff would cause downstream flooding without some method of controlling the water flow. These dams have openings at the bottom for slow release of all water from the detention basin. Such dams commonly have "dry reservoirs" or no permanent pool.

Dams - Statutory Law

Chapter 236, RSMo, covers the subject of dams, mills, and electric power. Section 236.010 provides for the erection of a dam across a non-navigable watercourse by the owner of the land. Section 236.020 provides for the construction of a dam across a watercourse by the owner of the land on one side of the stream, if owner is chartered to construct mills, electric power and light works or other machinery. Section 236.030, *et seq.* provides for the filing of a petition in circuit court to effect the provisions of Section 236.010 and .020. Sections 236.400 *et seq.* set up the Dam and Reservoir Safety Council.

In Section 236.400, RSMo, the following definitions appear.

(1) "**Agricultural dam**", any dam constructed to impound water for use in irrigation, livestock watering, or commercial fish rearing and sale;

(5) "**Dam**", any artificial or manmade barrier which does or may impound water, and which impoundment has or may have a surface area of fifteen or more acres of water at the water storage elevation, or which is thirty-five feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier or dam, if it is not across a streambed or watercourse, together with appurtenant works. Sections 236.400 to 236.500 shall not apply to any dam which is not or will not be in excess of thirty-five feet in height or to any dam or reservoir licensed and operated under the Federal Power Act.

(18) "**Reservoir**", any impoundment which results from a dam as defined in sections 236.400 to 236.500.

The Dam and Reservoir Safety Program is part of the Division of Geology and Land Survey (DGLS), DNR, and is located in Rolla. Established under the terms of Sections 236.400, *et seq.*, it provides the staff support to the Dam and Reservoir Safety Council for permitting and inspecting of non-agricultural dams over 35 feet in height and maintaining an inventory of dams in Missouri. There are presently 4,004 inventoried dams in Missouri that impound more than 50 acre-feet²⁹ of water and that are at least 6 feet in height or impound more than 15 acre-feet of water and are at least 25 feet high. The Dam and Reservoir Safety Program presently regulates 606 dams that are over 35 feet in height.³⁰ (See Figure 7, Regulated Dams in Missouri.)

Chapter 386, RSMo, establishes the Public Service Commission, provides its powers, and establishes its jurisdictional authority over water and sewer utilities that serve the public. Chapter 393, RSMo, governs water and sewer companies, setting forth powers and regu-

lations, authorizing how water mains may be constructed, the right to take water from a non-navigable stream, to erect a dam, and various other functions. The Public Service Commission has certain governing powers over private water and sewer companies, including setting of rates as provided in Section 393.140, RSMo. Also, the PSC has the authority to ascertain the valuation of property of utility companies. The PSC is involved in regulating electric plants, heating companies, public utilities, sewer corporations, sewer systems, water corporations, and water systems, as enumerated in Section 386.020, and in more detail in Section 386.250, subsections (1), (3), and (4). Section 393.030 specifically concerns the taking of water from a non-navigable stream, and erecting a dam for water storage. Charges for water, to pay for fire hydrants and water distribution lines are covered in Section 393.130.

In the chapter of Missouri Statutes authorizing County Planning and Zoning, sections 64.040, 64.231, 64.550, and 64.815, RSMo, deal with county master plans and their contents, specifically mentioning the conservation of natural resources, and other matters such as dams.

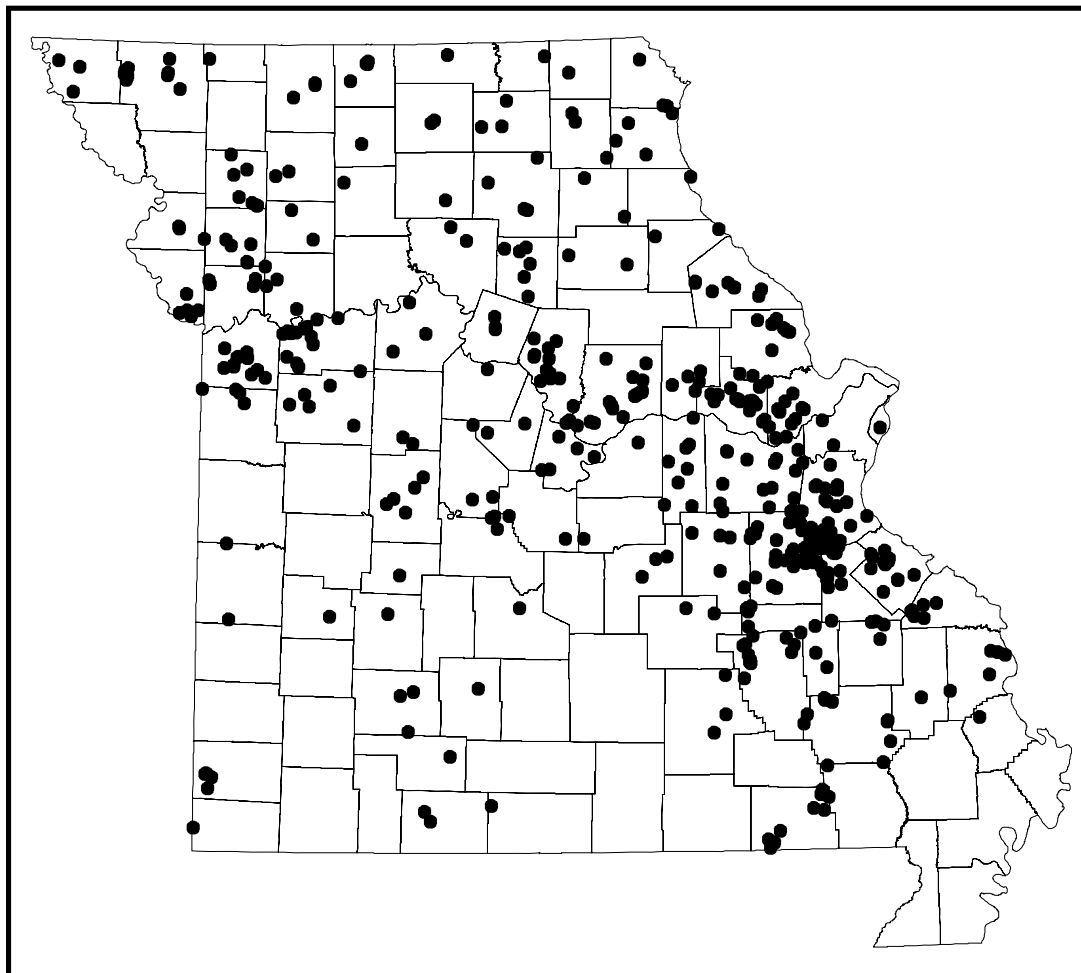


Figure 7. Regulated dams in Missouri. Map showing the locations of the 606 dams regulated by law in Missouri, indicating that the dam safety law has value statewide. Source: Dam and Reservoir Safety Program, DGLS.

³¹ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 463.

³² Please refer to the Water Use section, for discussion of Power Generation and the Water Rights and Water Supply sections for discussion on a property owner's right to construct a dam on a stream.

³³ Interagency Floodplain Management Review Committee to the Administration Floodplain Management Task Force, *Sharing the Challenge: Floodplain Management into the 21st Century (The Galloway Report)*, Washington, D.C.; June, 1994; p. 53.

Chapter 252, RSMo, creates the Department of Conservation, and is known as "The Wildlife and Forestry Law." In this chapter, section 252.150 provides that owners of dams shall provide for the free movement of fish, including construction of a fishway to enable fish to have free passage up and down the watercourses at all times.

Chapter 256.010 to 256.270 provides for the construction of hydroelectric and milldams on nonnavigable streams, pursuant to a permit from the county circuit court where the dam will be located. What constitutes nonnavigable streams is not defined by the statute, but rather courts have held that it is determined by the federal navigation jurisdiction test.³¹

Hydroelectric power plants are regulated by the Federal Energy Regulatory Commission (FERC). Section 393.030, RSMo, deals with the right to take water from a non-navigable stream, and erect a dam for power generation. The right to condemn land for this purpose also is provided. Bagnell Dam, forming the Lake of the Ozarks, is an example of a hydroelectric power dam. It is owned by the AmerenUE Company. Power generation is one of the largest uses of water in Missouri.³²

In addition to Bagnell Dam, other major dams in Missouri include Clarence Cannon Dam, on the Salt River; Clearwater Dam, on the Black River; Harry S Truman Dam, on the Osage River; Long Branch Dam, on the East Fork of the Chariton River; Pomme de Terre Dam, on the Pomme de Terre River; Smithville Dam, on the Little Platte River; Stockton Dam, on the Sac River; Table Rock Dam, on the White River, and Wappapello Dam, on the St. Francis River, all of which are owned and operated by the U.S. Army, Corps of Engineers. Thomas Hill Dam (and Reservoir), on the Middle Fork of the Chariton River, is owned by Associated Electric Cooperative, Inc., and is used for steam and cooling water for its thermal electric power plant (coal-fired steam-driven turbines). There is a pump-back feature, here, to conserve water. (See Figure 8, Major Dams in Missouri.)

There are a series of locks and dams on the Upper Mississippi River, upstream of St. Louis. These locks and dams were built to make navigation easier and are not regulated under state statute, but rather are managed by the federal government under the Commerce Clause of the U.S. Constitution. These dams are low-height dams that create a series of navigational pools along the course of the Upper Mississippi River. The way in which these dams are constructed allows them to be fully opened during flood events, so they do not impound flood waters.³³ These federal locks and dams are built and operated by the U.S. Army Corps of Engineers.

Case Law-Dams

Much of case law, unlike statutory law, is oriented towards the infringement of riparian rights or the physical damage to the property of other riparian landowners. Construction of dams by private landowners on their property has been recognized, following common law riparian practice, as a function of land ownership and the

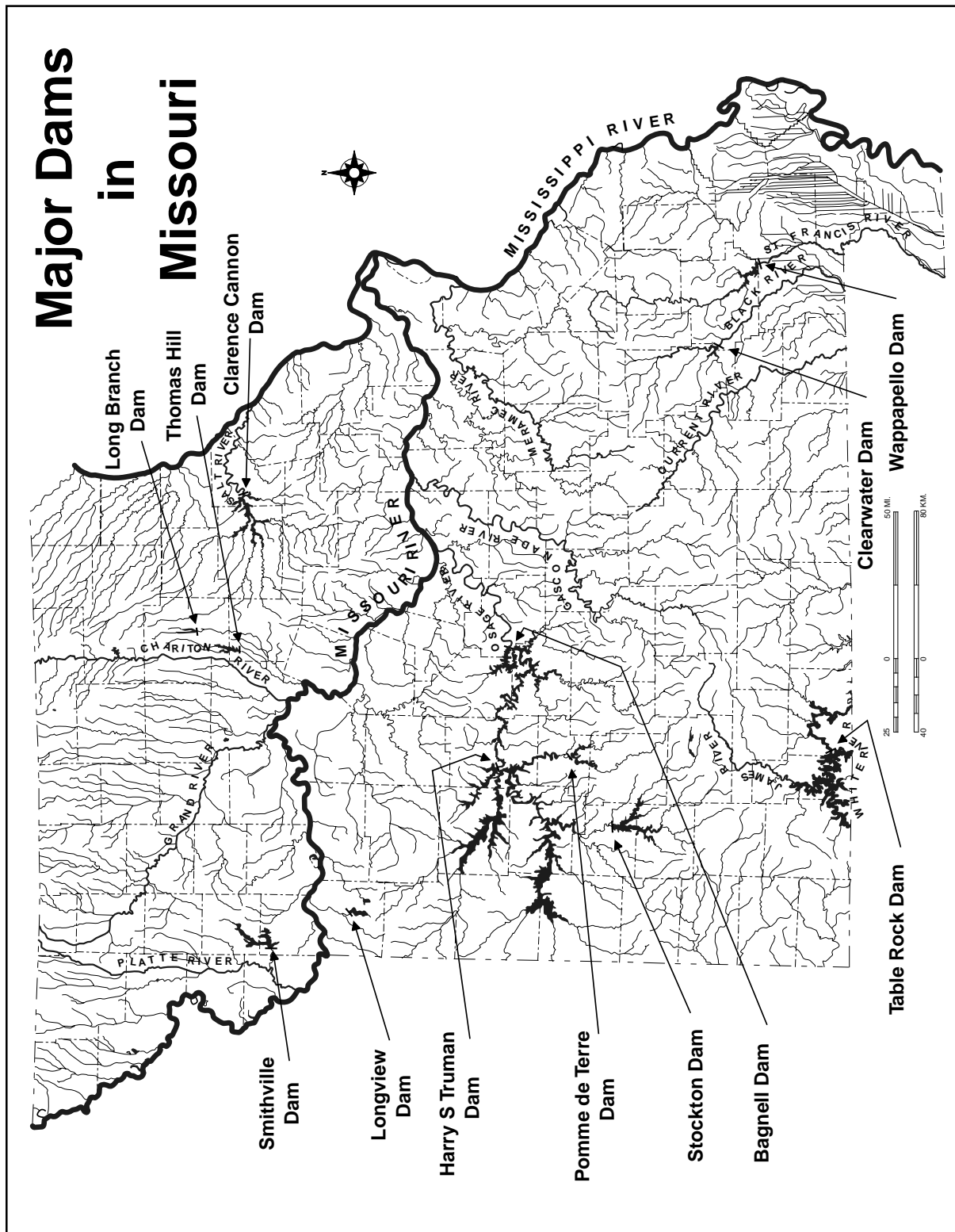


Figure 8. Major dams in Missouri. Source: DGLS

³⁴ Dewsnup and Jensen, pp. 439, 442, and 445-46.

³⁵ Please refer to the Water Use section where riparian expectations of use in surface water and watercourses are more fully discussed.

³⁶ This includes private individuals, artificial persons or corporations, and governmental entities.

owner's right to use and enjoy his land (see cases following). This appears to be particularly true if the dam and reservoir to impound surface water is wholly contained on the landowner's property, if it is fed by run-off from the landowner's surrounding property, the landowner uses the water for the benefit of his own property, and the impoundment and use of the water by the landowner does not unreasonably interfere with another landowner. The same cannot necessarily be said for surface water or watercourses that cross property boundaries.³⁴ If the impoundment of water in a watercourse interferes with another riparian's use and enjoyment of his property, it is actionable in a court of law.³⁵ Generally, landowners³⁶ may not construct dams on navigable watercourses, the same being true for the State. The reason is, in part, that the individual or State does not have the right to interfere with or impede navigation and commerce. The federal government, however, does have the right to dam a navigable river.

In the case of *United States v. Combs*, 37 U.S. (12 Pet.) 72 (1838), the U.S. Supreme Court upheld the power of Congress to restrain interference with navigation as pursuant to the Commerce Clause of the U.S. Constitution. "The power to regulate commerce includes the power to regulate navigation as connected with the commerce with foreign nations and among the several states. It does not stop at the mere boundary line of a state, nor is it confined to acts done on the waters, or in the necessary course of navigation thereof. It extends to such acts done on land which interfere with, obstruct, or prevent the due exercise of the power to regulate commerce and navigation with foreign nations and among the states. Any offence which thus interferes, obstructs, or prevents such commerce and navigation, though done on land, may be punished by Congress, under its general authority, to make all laws necessary and proper to execute their delegated constitutional powers," wrote the court.

This right of the federal government to manage a navigable river is discussed in the case of *Gilman v. Philadelphia*, 70 U.S. (3 Wall.) 713 (1865), where the Supreme Court addressed "navigational servitude" and federal power to restrain interference with navigation. The court held that "the power to regulate commerce comprehends the control for that purpose, and to the extent necessary, of all the navigable waters of the U.S., which are accessible from a state other than those on which they lie; and includes, necessarily, the power to keep them open and free from any obstruction to their navigation, imposed by the states or otherwise. It is for Congress to determine when its full power shall be brought into activity, and as to the regulations and sanctions which shall be provided. Congress may impose whatever it shall deem necessary, by either general or special laws."

In *Union Bridge Co. v. United States*, 204 U.S. 364 (1907), the U.S. Supreme Court held that commerce comprehends navigation, and to free navigation from unreasonable obstructions by compelling their removal is a legitimate exercise by Congress of its power to regulate commerce. Although a bridge, erected over navigable water of the U.S. and under the authority of state charter, may have been

lawful when erected and not an obstruction to commerce at the time, it was erected with the knowledge by the owners of the paramount authority of Congress over navigation and subject to the power of Congress to exercise its authority to protect navigation by forbidding maintenance when it became an obstruction.

In *United States v. Chandler-Dunbar Water Power Co.*, 229 U.S. 53 (1913), the court determined that a title to ownership of lands upon the bank of a navigable river and to the bed of the river, is at best a qualified one. It is subordinate to the public right of navigation, and however helpful in protecting the owner against the acts of third parties, is of no avail against the exercise of the great and absolute power of Congress over the improvement of navigable rivers. If, in the judgement of Congress, the use of the bottom of the river is proper for the purpose of placing therein structures in aid of navigation, it is not thereby taking private property for a public use, for the owner's title was in its very nature subject to that use in the interest of public navigation. If Congress determines that structures placed in the river and upon such submerged lands are an obstruction or hindrance to the proper use of the river for purposes of navigation, it may require their removal and forbid the use of the bed of the river by the owner in any way which in its judgement is injurious to the dominant right of navigation.

The obstruction of a non-navigable watercourse, which results in the upstream flooding of other riparian lands, may constitute a nuisance or a trespass. Obstruction of a watercourse can also constitute a violation of riparian rights, as can the modification of a watercourse channel which causes other riparian landowners to experience stream bank erosion.³⁷

In the 1841 case of *Welton v. Martin*, 7 Mo. 309, addressing the riparian rights of a landowner, the court ruled that the owner of the land is entitled to the use of a watercourse which flows across his land. With limitations, the courts have historically granted that "use" includes impounding water by use of dams. Should the "use" be found not to be reasonable or impinge the rights of another, the use has been disallowed as discussed in the following cases.

In the case of *Blankenship v. Kansas Explorations*, 325 Mo. 998, 30 S.W.2d 471 (1930), the court gave implied approval of a dam on a flowing watercourse, the dam being used in a reasonable manner for the operation of a mill.

Sigler v. Inter-River Drainage Dist., 311 Mo. 175, 279 S.W. 50 (1925), addressed floodwater and the drainage of diffused surface waters, rather than watercourses, as in *Blankenship*. Here, the court specifically allowed for the construction of dams, dikes or other construction by landowners to protect their premises from overflow waters.³⁸

In *Blackburn v. Gaydon*, 245 S.W.2d 161 (1951) the court disallowed dams, dikes, or other improvements to a property to ward off flood waters which cause the water to be collected and then cast in a concentrated form to the land of another in a manner in which the waters would not normally flow.

³⁷ *Welton v. Martin*, 7 Mo. 307 (1842); *Wood v. Craig*, 113 S.W. 676 (1908); *Rector v. Tobin Constr. Co.*, 351 S.W.2d 816 (1961); *Jacobs v. Frangos*, 329 S.W.2d 262 (1959); as per Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 459.

³⁸ Overflow water being recognized by the courts as synonymous with diffused surface water or surface water, and distinct from a watercourse or stream: see *Benson v. Chicago & Alton R.R. Co.*; *Dardenne Realty Co. v. Abeken*; *Dudley Special Road Dist. v. Harrison*; *Goll v. Chicago & Alton Railway Co.*; *Haith v. County of Atchison*; *Keener v. Sharp*, 1937; *Keyton v. MKT Rail Road*; *Munkres v. Kansas City, St. J. & C.B. Ry.*; *Place v. Union Township*; et al.

With reference to navigation, the case of *Weller v. Missouri Lumber & Mining Co.*, 176 Mo. App. 243, 161 S.W. 853 (Spr. App. 1913) is an example of a dam being declared a non-allowable use. Here, the Missouri court ruled that any man-made obstruction which prevents travel on an otherwise navigable stream is a public nuisance and may be abated by judicial action.

The case of *United States v. Grand River Dam Authority*, 363 U.S. 229 (1960), further defined the federal authority over navigable waterways and nonnavigable tributaries to protect navigation, superseding state law and even federal regulatory agency approval. The federal court held that when a state agency had been authorized by state law and a license from the Federal Power Commission to build hydroelectric plants on a nonnavigable tributary of a navigable stream, and subsequently the Federal Government prevented the consummation by building its own dam to protect the navigable capacity of the navigable stream, the state agency is not entitled to compensation for "taking" of its water-power rights.

Likewise, the federal government also has the power to obstruct a navigable waterway in the course of protecting or improving navigation on another, as is illustrated by the holding in the case of *United States v. Commodore Park*, 324 U.S. 386 (1945). This involved a construction project on a navigable watercourse where dredge material was deposited in a connecting navigable river, thereby blocking it to navigation. The court ruled that the construction activities were part of an integrated project which benefited commerce and navigation, and that the rule of governmental non-liability was applicable. It held that the constitutional power of the federal government to regulate commerce may be exercised to block navigation at one place in order to aid it at another.

Reservoirs

A reservoir is the stored body of water, typically behind a dam. The term implies that the water is reserved for some purpose or a combination of purposes. A few of the most common purposes include water supply, hydro-electric power generation, recreation, fish and wildlife habitat, low-flow augmentation, and retention of water to prevent downstream flooding.

Statutory Law - Reservoirs

Chapter 257, RSMo, authorizes Water Conservancy Districts to be formed in watersheds or basins of rivers of Missouri for various engineering purposes. Storage of floodwaters is addressed in part by Section 256.435 *et seq.*, RSMo, the Multipurpose Water Resources Program, Water Supply and Storage Projects Law. Section 236.400 (18), RSMo, provides the following definition:

"Reservoir", any impoundment which results from a dam as defined in sections 236.400 to 236.500.

Case Law - Reservoirs

There is very little pertinent case law that directly addresses reservoirs. As stated previously, riparian rights, including usage of surface water and water in watercourses, arise from land ownership. A riparian landowner may construct a dam for the purpose of creating a reservoir of water so long as his action, intentional or unintentional, does not impinge on the rights of another³⁹ or is statutorily illegal.

The concept that storing water is a hazardous activity is carried over from English common law. Consequently, dam owners have certain legal responsibilities and liabilities. In Missouri, state regulatory dam hazard classifications are: I) high hazard—ten or more homes or any public buildings downstream from the dam; II) intermediate hazard—one to ten homes or campground with utilities downstream; or III) low hazard—no structures in the downstream area. When dam failures cause damage to the property of others, civil law recourse can involve lawsuits brought on the legal basis of either “negligence” or “strict liability.” Negligence is sometimes claimed when a certain degree of care can be shown not to have been exercised by the dam owner. Strict liability is utilized in instances that are not dependant upon reasonable care shown by the dam owner, such as an extraordinary rainfall event, flood, earthquake, or other “act of God.”⁴⁰ (See Figure 9, Mine Tailings Dam, an Example of a High Hazard Dam.)

Typically, in case law, the judiciary refers to “dams” as water retention or detention devices in navigable watercourses. Courts usually refer to water retention or detention devices in non-navigable streams or surface water drainage ditches as “obstructions.” Legally, they treat an obstruction of surface water as a component of a “surface water drainage system.” Damages to the property of another that result from the failure of a “dam or obstruction” of a non-navigable stream or surface water drainage ditch is legally viewed in the same way as damages from water that backs-up onto an adjacent owner’s property. This approach allows the courts to apply the reasonable use doctrine equitably whether the injured property is located upstream or downstream.

³⁹ *Blankenship v. Kansas Explorations* (1930); see also the section on Water Rights.

⁴⁰ Per Jim Alexander, Program Director, Reservoir and Dam Safety, DNR, 17 July, 98.



Figure 9. Mine tailings dam, an example of a high-hazard dam. Source: Dam and Reservoir Safety Program, D&RS.

WATER QUALITY

Many human activities and natural factors affect the quality of Missouri's waters. Some water uses, like wastewater discharges, commercial navigation and power generation, may degrade water quality. Most uses are dependent on quality water. Water used for agricultural irrigation can generally be of a different quality, as compared to water for swimming. Some plant and animal species are extremely sensitive to low quality water, while others are more tolerant. Water quality can be influenced by chemical, radiological, biological or physical (e.g. temperature [thermal] pollution or turbidity) factors, or a combination of these factors. Additionally, dependant upon the use to which the water is put, these factors may degrade, improve, or have no effect upon the quality of the water.¹ As they pertain to water quality, statutory laws typically address regulation and financing of public systems; case law typically redresses grievances involving damages.

¹ Cynthia Brookshire, Hydrologist, Water Resources Program, Division of Geology and Land Survey, Missouri Department of Natural Resources, 28 January 1998.

² Davis, P.N., *Federal and State Water Quality in Missouri*, pp. 505-06.

³ Davis, P.N., *Federal and State Water Quality in Missouri*, p. 506.

WATER POLLUTION

Codified water quality laws are distributed among federal and state statutes. The pollution of watercourses and groundwater are addressed separately at the federal level, but are integrated under Missouri law. Waste discharges from point sources, unlike non-point sources, are fully regulated under federal law. The injection of wastes into groundwaters is banned under Missouri law, but only partially prohibited under federal law. The percolation of hazardous wastes into groundwater is illegal under both federal and state statutes.²

Civil lawsuits based on common law and equity provide individuals with the means to receive monetary damages from polluters for past damages and to secure court ordered injunctions to prevent future actions which will result in the pollution of private property.³

State Constitutional Authorization

The Constitution of Missouri authorizes the General Assembly to establish a Water Pollution Control Bond and Interest Fund and

⁴ Federal laws that contain provisions and conditions for citizen initiated lawsuits to enforce compliance with federally enacted water quality laws. Federal laws with this provision includes the Clean Water Act, Solid Waste Disposal Act, Comprehensive Environmental Response, Compensation and Liability Act, Resource Conservation and Recovery Act, and the Surface Mining Control and Reclamation Act.

⁵ The Missouri Clean Water Law, Missouri Waste Management Law, and the Cave Resources Act do not contain provisions for citizen suits, however the Surface Coal Mining Law does provide for citizen suit, RSMo. 444.880.

⁶ Davis, P.N., *Law and Fact Patterns in Common Law Water Pollution Cases*, p. 3.

the subsequent issuance of bonds, the funds of which "stand appropriated" without additional legislative action. This is found at Article III, Section 37 (b), an amendment adopted in 1971, which provided for not more than \$150 million. Additional water pollution control bonds were authorized in 1979, as part of Article III, Section 37 (c), which provided another \$200 million. Funds are used to carry out a construction grant program of the Clean Water Commission, DNR.

Common Law and Case Law

Case law, in mitigating local pollution problems, supplements statutory law by addressing problems that comprehensive regulations cannot. The citizen suit provision⁴ of the federal laws allows private individuals to sue any offender to require compliance with the federal act.⁵ The provision however, does not provide for individual damages. It is for this reason that citizen-initiated lawsuits play an important role in supplementing statutory law in the protection of the individual and society's right to high quality water.⁶

Statutes

Chapter 644, RSMo, is called the Missouri Clean Water Law. In Section 644.011, the General Assembly enacted a statement of policy regarding pollution of the waters of Missouri, saying that pollution "constitutes a menace to the public health and welfare, creates a public nuisance, is harmful to wildlife, fish and aquatic life, and impairs domestic, agricultural, industrial, recreational and other legitimate uses of water." The statement goes on to declare public policy "to conserve the waters of the state and to protect, maintain, and improve the quality thereof for public water supplies and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses and for the propagation of wildlife, fish and aquatic life; to provide that no waste be discharged into any waters of the state without first receiving the necessary treatment or other corrective action to protect the legitimate beneficial uses of such waters" and to "provide for the prevention, abatement and control of new or existing water pollution."

Section 644.021 of this statute (formerly Section 204.021, adopted in 1961 and transferred in 1986) created the Clean Water Commission (CWC), which operated independently until the State Reorganization Act of 1974, when the Department of Natural Resources (DNR) was created, and the CWC was made part of the DNR. The CWC is one of the rule-making bodies set up by the General Assembly to carry out water law.

Case Law Enforcement of the Clean Water Law, Chapter 644, RSMo.

The case of *State ex rel. Dresser Indus., Inc. v. Ruddy*, 592 S.W.2d 789 (Mo. 1980) involved the discharge of barite mine tailings into Buss Branch, Mill Creek, Big River, and the Meramec River as a result of a rupture in a settling basin at Dresser's Washington County mine

site. Dresser Industries was incorporated in the State of Delaware and its principal place of business was in Texas. In Missouri, Dresser refractories were located in Audrain and Callaway Counties, its barite mining operation was in Washington County, and the company resident agent was located in St. Louis. The case was filed and appealed in St. Louis County.

The Missouri Departments of Conservation and Natural Resources filed against Dresser under provisions of the Missouri Clean Water Law (then sections 204.006 *et. seq.*, RSMo. Supp. 1975), alleging injury to the waterways of Missouri and asked for actual damages of \$1 million and statutory penalties of \$2 million. Additionally, the State alone sued as a plaintiff as provided for under the laws of common law nuisance. The State alleged that Dresser constructed and maintained a settling basin which it knew was unsafe and that the resulting damage caused a public nuisance.

The principal contentions in the petition for the writ of prohibition, by Dresser, included: 1) the state can not recover damages to its alleged quasi-sovereign interest pursuant to a common law nuisance action, 2) even though the law be otherwise, damages are not recoverable under a nuisance theory, because the relatively new Clean Water Law has pre-empted the field of "public nuisance" in water pollution cases, 3) damages are not recoverable by the state under the Clean Water Law, Chapter 204, because of unconstitutional provisions in that they: A) impermissibly delegate legislative authority to the commission, B) violate due process by the imposition of statutory penalties for day following the rupture of the settling basin dam, C) are vague and indefinite, and D) are ex-post facto in nature, and 4) venue in St. Louis County Circuit Court is improper in that Section 204.076.1 of the Clean Water Law provides for venue elsewhere.

The Supreme Court's responses were: 1) nuisance claim was viable, 2) it left determination of appropriateness of damages to the trial court, 3) "Enactment of Clean Water Law did not proscribe⁷ common-law nuisance actions for pollution of streams and waterways on behalf of State or private individuals", and 4) venue was proper. The court cited Section 204.076.1, "Suit may be brought in any county where defendant's principal place of business is located or where the water pollution violation occurred;" and Section 204.131, by noting, "Nothing in the Clean Water Law alters or abridges any right of action now or hereafter existing in law or equity, civil or criminal." The Supreme Court quashed the preliminary writ and denied request for rehearing.

⁷ "to deprive of the protection of the law," "to forbid the practice of" - *Webster's New World Dictionary*.

⁸ U.S. Environmental Protection Agency, Fact Sheet EPA-841-96-004D, March, 1996.

Nonpoint Source Pollution

Both "point source" pollution and "nonpoint source" pollution are addressed in Chapter 644, RSMo. It has been estimated that at least half of water quality problems in the U.S. result from nonpoint source pollution.⁸ Nonpoint source (NPS) pollution can occur when rainfall, snow-melt, or irrigation water runs over the land or through the ground, picks up pollutants, and deposits them into rivers, lakes,

⁹ U.S. E.P.A., Fact Sheet EPA-841-F-004G, March, 1996.

¹⁰ "Waters of the United States" is an old term, used to distinguish national jurisdiction from "Waters of Canada" or "Waters of Mexico," and formerly, "Waters of Spain" and "Waters of France." See *Avoyelles Sportsmen's League v. Alexander*, 473 F.Supp. 525 (1979), *F.P.C. v. Niagara Mohawk Power Corp.*, 347 U.S. 239 (1954), *Gilman v. Philadelphia*, 70 U.S. (3 Wall.) 713 (1865), *New Jersey v. New York*, 283 U.S. 336 (1931), and *United States v. Cress*, 243 U.S. 316 (1917), for court cited usage.

or wetlands, or introduces them into groundwater. The most common NPS pollutants are soils and nutrients that wash into water bodies from land, such as plowed fields, and construction sites. Urban stormwater runoff is another major source of NPS pollution. Because of paving and roofing, a typical city block generates nine times as much runoff as a similar sized forested plot.⁹

Definitions

Water pollution and waters of the state are defined at Section 644.016, RSMo, as follows.

(9) **"Pollution"**, such contamination or other alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is reasonably certain to create a nuisance or render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, industrial, agricultural, recreational, or other legitimate beneficial uses, or to wild animals, birds, fish or other aquatic life.

(17) **"Waters of the state"**, all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two or more persons jointly or as tenants in common and includes waters of the United States lying within the state.¹⁰

Permits are required, by law and by regulations adopted pursuant to law, for certain activities that affect water quality; fees are charged, violations are described, and penalties are provided. The chapter also authorizes Water Pollution Bonds to help in constructing sewage treatment facilities in Missouri. This is authorized under the State Constitution, Article III, Section 37(e), dealing with water pollution control, improvement of drinking water systems and storm water [sic] control.

Stream Pollution

Chapter 250, RSMo, deals with stream pollution abatement, city and district water works, and sewerage. Section 577.150, RSMo, forbids the diversion of a natural spring, brook, or other water supply, once it has "been taken for use," and forbids the poisoning or pollution of any such water supply, with penalties prescribed. The contamination of any water body by placing an animal carcass is forbidden by Section 577.076, RSMo. Boats may not pollute rivers and streams by discharging sewage, as regulated by Chapter 306, RSMo. This means that boats must have holding tanks, and marinas must have dumping stations for the emptying of holding tanks. There are such things as U.S. Coast Guard-approved marine sanitation devices

(MSDs), which may be of three types, the simplest of which merely stores sewage onboard for pumpout at a station.

Section 577.073, RSMo, forbids dumping in or contaminating the waters of any state park, and Section 252.045, RSMo, forbids dumping in or on the land or waters of the Missouri Conservation Commission.

Pesticide Pollution

The use and registration of pesticides are addressed by Chapter 281, RSMo. The protection of the environment in general and of water in particular is the purpose of this chapter. Pesticides are commonly used in agriculture, and on golf courses and other playing fields, and on residential lawns. Some pesticides are known to be carried into water supplies by stormwater runoff. Maximum contaminant levels (MCLs) in drinking water supplies are established by the Safe Drinking Water Commission of the DNR pursuant to Section 640.105, RSMo, to protect human health from the effects of toxic substances. The Missouri Department of Agriculture has a state plan for reducing pollution from agricultural pesticide use.

Case Law- Pesticide Pollution

The federal case of *Texas v. Pankey*, 441 F.2d 236 (10th Cir. 1971), involved federal common law dealing with water pollution. The state of Texas sought to enjoin residents in the state of New Mexico from using certain pesticides which would allegedly pollute an interstate river serving as domestic water supply for eleven Texas cities. The court held that "impairment of ecological rights of a state, from sources outside the state's own territory, is a matter having basis and standard in federal common law and, thus, constitute a question arising under the laws of the United States for the purpose of determining whether federal district court has jurisdiction of action by the state against residents of another state." In effect, the court held that it did have jurisdiction to hear the case and that this was a proper topic for the federal court system. It remanded the case for further scientific data as to amounts and effects of the polluting agents.

Other Statutes

Chapter 260, RSMo, entitled "Environmental Control," establishes an environmental improvement authority, dealing with such matters as energy resource development, solid waste recycling and disposal, and hazardous waste site clean-ups, thus avoiding or mitigating water pollution. (The Environmental Improvement and Energy Resources Authority [EIERA] of the DNR is the administrator of this law, Jefferson City.) This Environmental Control Law serves to abate water pollution. Section 260.095, specifically covers water facilities and sewage.

Solid Waste Disposal is the subject covered by Sections 260.200 to 260.255, including infectious waste, demolition waste, fly ash materials, and transportation of solid waste. All of these are pollution factors.

¹¹ See also *Missouri Water Resources Law 1998 Annual Report*.

¹² Provisions for protection of karst areas from hazardous waste landfill siting include state regulations, 10 CSR 25-7.264(2)(N) 1. and 2., and subpart (IV) which states: "No landfill shall be located in the following areas: . . . (b) Within two hundred feet (200') of a fault which has had surface displacement in Holocene time; . . . (d) In an area of unstable soil deposits or area(s) containing landslides; or (e) In an area subject to catastrophic collapse as evaluated by the Division of Geology and Land Survey;" and federal regulations, 40 CFR 264 Subpart N - Landfill Design Requirements for Foundation and Permeability.

Disposal of storage batteries, containing lead and acid, is covered by Sections 260.260 to 260.266. Disposal of waste tires, which can hold water and become breeding areas for flies and mosquitoes, is covered by Sections 260.270 to 260.276. Solid Waste Management Districts, to allow economical collection of garbage, are established by Sections 260.300 to 260.345.

Section 577.071, RSMo, describes the duty of the county prosecuting attorney in regard to the illegal disposal of solid waste (with reference to Sections 260.211 and 260.212, RSMo, the prosecutor may sue to enforce).

Hazardous Waste Management, including management of PCBs (Poly-Chlorinated Biphenyls), is the topic of Sections 260.350 to 260.434. The Hazardous Waste Management Commission of DNR is created by Section 260.365 and regulates hazardous waste to protect water resources and to ensure that any contamination is remediated as quickly as possible. The department oversees groundwater and surface water monitoring at hazardous waste sites within the state. As part of this supervisory oversight, hazardous waste facilities are required to determine the impact of past and present waste management practices on water quality. This includes determining the extent of contamination, distribution of contamination, and potential effects on other waters or water users.¹¹ Radioactive waste is dealt with by means of a Midwest Interstate Low-level Radioactive Waste Compact, authorized by Sections 260.700 to 260.735, RSMo.

The Environmental Control Law, Chapter 260, RSMo, also addresses the topics of Abandoned or Uncontrolled Sites, Hazardous Waste Cleanup, Voluntary Remediation, Area Revitalization Authorities, Radiation Monitoring, Waste-to-Energy Facilities, and the Environmental Improvement and Energy Resources Authority (EIERA) of the DNR.

Landfills are restricted by regulations from being placed in karst areas, and by law from being placed above a groundwater divide. A significant section of the statute is Section 260.429, which states that DNR shall determine if a proposed hazardous waste site is in a non-karst area, and that no permit shall be issued in a non-karst area¹² for a site located over a groundwater divide. "In non-karst areas of the state, the department of natural resources shall not issue a hazardous waste facility permit for a proposed commercial hazardous waste landfill, if such landfill would be located directly over a groundwater divide. The department of natural resources shall review on a site-by-site basis, whether a proposed site is in a non-karst region." A groundwater divide, like a watershed divide, is the demarcation for groundwater to flow in different directions. [The double negative in the law can be confusing to readers.] (See Fig. 10.)

Sections 256.200 *et seq.*, RSMo, sets up the Clean Water Commission of the DNR; Sections 256.280 *et seq.*, deal with water development, and Sections 256.400 *et seq.*, address water usage. Sections 256.435 *et seq.*, establishes the multipurpose water resources program, water supply, and storage projects. Sections 256.600 *et seq.*,

are the Missouri Water Well Drillers' Law. Sections 256.641 et seq., create the Southeast Missouri Regional Water District in the agricultural irrigation area of the "Bootheel" region of the state, to protect the quality and quantity of groundwater supply in that area.

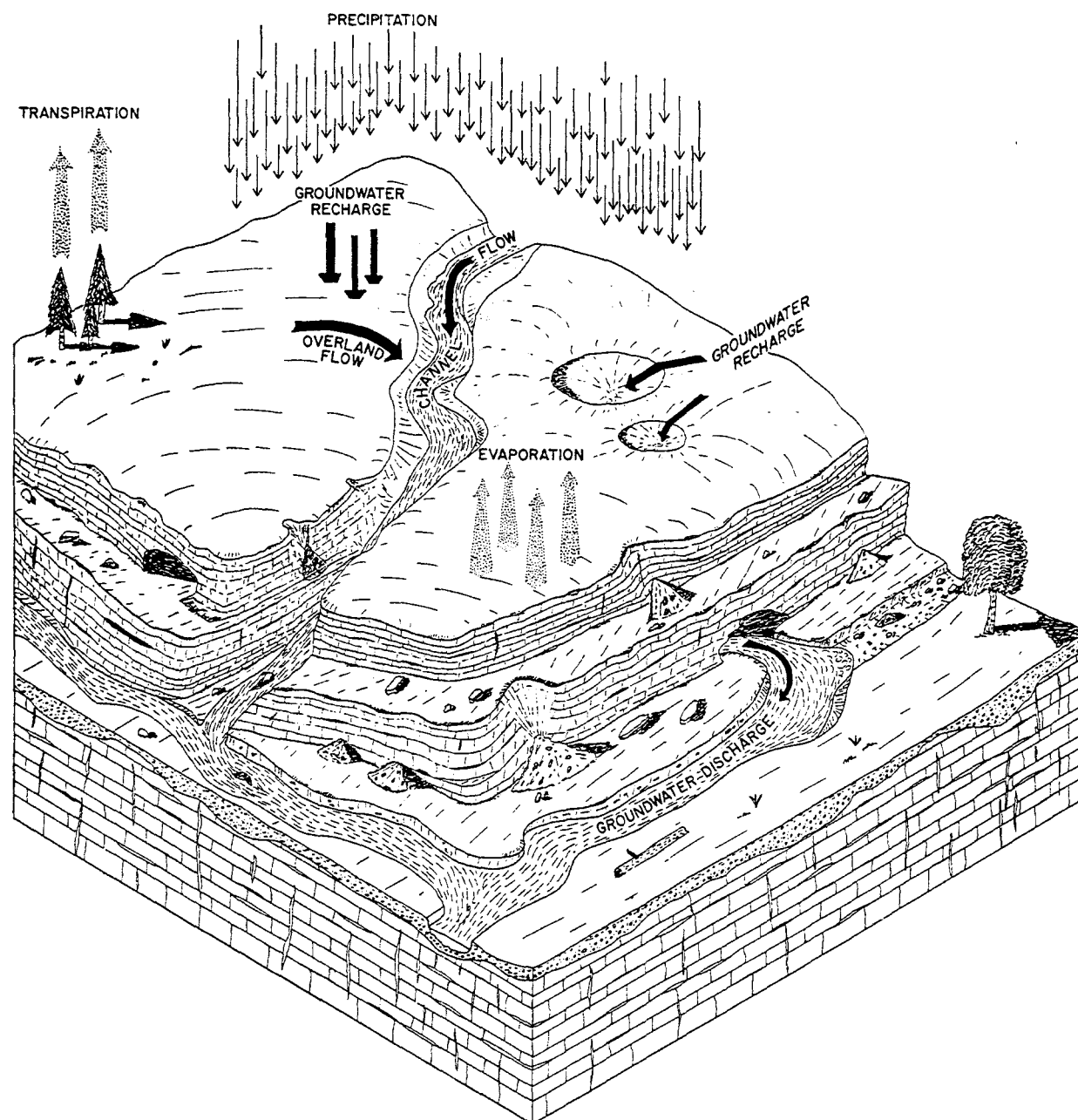


Figure 10. The meaning of "karst." This drawing presents a three-dimensional cut-away view of karst topography, such as is found in the Ozarks region, showing water movement within the earth through rock fractures and dissolved openings into caves and underground streams. Surface features, such as sinkholes, also are shown. The noun, karst, comes from the place name of a region of Slovenia characterized by these solutional features. Limestone and dolomite are particularly susceptible to the development of karst features. Source: DNR drawing by James E. Vandike, Water Resources Program, DGLS, from *The Hydrology of Maramec Spring*, Water Resources Report No. 55, 1997, p. 20.

¹³ This section relies on an article by Peter Davis, entitled, "Law And Fact Patterns In Common Law Water Pollution Cases," from *Missouri Environmental Law and Policy Review*, Vol.1, No.1, Summer, 1993, pp. 3-10.

Hazardous, Solid, and Other Pollutants

Sections 292.600, *et seq.*, RSMo, relate to the federal Emergency Planning and the Community Right-to-Know Laws, and deals with hazardous substances in the workplace. (This federal statute is part of Public Law 99-499, 1986.) The Missouri statute defines hazardous substances, and what emergency planning committees are; establishes the Missouri Emergency Response Commission; establishes the Chemical Emergency Preparedness Fund, and gives authority to the Department of Public Safety to adopt rules to meet the reporting requirements of the federal Community Right-to-Know Law.

The "Metallic Minerals Waste Management Act" is Sections 444.350 to 444.380, RSMo, in the Chapter on Mines and Mine Owners. This same chapter includes the "Strip Mine Law," the "Land Reclamation Act," and the "Surface Coal Mining Law." Because mining is intrusive in the earth, the surface of the earth may be altered as well as surface waters and groundwaters. Several federal laws that interplay with state laws, including the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or "Superfund" Act) are also related to the topic.

Water Pollution/Water Quality Certification

The Missouri Clean Water Law, Section 644.006 - 644.141, RSMo, is designed to complement the U.S. Clean Water Act. Under the federal law, the state and the U.S. Army, Corps of Engineers, issue joint public notices regarding applications for permits for development in "waters of the United States" in Missouri, including wetland development and lakeshore development, especially what is called "dredge and fill." Oversight is a role of the EPA. In Missouri, DNR carries out the terms of the law. DNR issues Certificates of Water Quality (Water Quality Certifications), in conjunction with the Corps' permits, under the terms of Sections 401 and 404 of the federal Water Pollution Control Act.

Legal Premises Used In Water Pollution Cases ¹³

Statutory law is the primary source of laws regulating water quality. As stated earlier, case law and common law supplement statutory law by dealing with specific occurrences of pollution that statutory law does not cover. Individuals bring civil suit for relief and reparation when they have suffered loss or damage to their private property. Most Missouri water pollution cases involve watercourses and surface waters, and have been brought under the private nuisance theory. The second greatest number of civil actions also involves pollution of watercourses and surface waters by relying upon the negligence theory. Legal theories that are used by individuals in civil law suits are explained as follows:

"Private nuisances" are the most common bases for pollution litigation. A private nuisance is an unreasonable and substantial interference with the use and enjoyment of another's land, which im-

pairs the fitness of the land for ordinary use, but does not involve a personal trespass onto the land. An example of a private nuisance is the unintentional contamination of another's domestic water supply by activities taking place on adjoining land.¹⁴

A "public nuisance" is an unreasonable interference with a right common to the general public to the extent that it endangers or injures the property, health, safety, or comfort of numerous persons. An example of a public nuisance is the unintentional contamination of a public water supply by pollution from an adjoining landowner.¹⁵

"Negligence" is "conduct which falls below the standard established by law for the protection of others against unreasonable risk or harm,"¹⁶ and focuses upon a person's conduct rather than consequences of an action. It involves an activity which is not performed in a reasonable or prudent manner that results in loss, damage or injury to another. Negligence involves the predictability of the damage, injury or loss suffered by one as a result of the actions of another, rather than the extent of the damage, injury or loss.

Litigation brought on the basis of "riparian rights" is founded on the expectation of access to water which is of a certain quality. Missouri bases its legal standard on reasonable use, as opposed to natural flow.¹⁷ As discussed in the section on Water Rights, a riparian landowner has not only a right to reasonable use of quantity, but also the expectation that the water is of a certain quality. Reasonableness is determined on a case-by-case basis of the claims and uses by other riparians. Reasonable use allows for some alteration of water quality, while natural flow allows for none. The basis of a riparian rights cause of action, in Missouri, is founded on the degree of reasonableness with which a person interferes with the rights of other riparian users.

"Diffused surface water pollution rules" involve the contamination of drainage waters or diffused surface waters, of which there are three distinct variations--common enemy, civil law, and reasonable use.¹⁸ Under this approach, even though an upper landowner is allowed to remove unwanted surface water from his land, pollution of the water carries liability if found to be unreasonable. Missouri courts subscribe to the theory that polluted drainage water is of a different character than unpolluted water, but have also held that an insignificant amount of pollution may not be grounds for relief.

The rule of "strict liability" is most usually applied to petroleum and mining industries and entails activities that are abnormally dangerous because of their very nature to cause harm or injury. Those engaged in such activities are expected to provide compensation for consequential injuries and damages to the one who is harmed, because it is not reasonable to expect the one who is harmed to assume any burden under any circumstance.

"Trespass" is the unlawful, nonpermissive and unprivileged physical entry or intrusion on, beneath or above another's land, which violates the landowner's exclusive possession and right to exclude others. Trespass encompasses both intentional and unintentional in-

¹⁴ The case of *Bower v. Hog Builders, Inc.*, 461 S.W.2d 784 (1970) involved feedlot sewage lagoon effluent flowing across property boundaries and resulting in odors and the pollution of a livestock watering pond.

¹⁵ The case of *Schoen v. Kansas City*, 65 Mo. App. 134 (1895), involved individual enforcement of public nuisance when city sewage effluent contaminated a stream resulting in damages to the property of private individuals.

¹⁶ Restatement 2d, Torts §282 (1965).

¹⁷ Natural Flow theory is that each riparian is entitled to have the water in a watercourse flow in its natural quality and quantity.

¹⁸ Missouri previously subscribed to the common enemy rule on diffused surface waters, see *Casanover v. Villanova Realty Co.*, 209 S.W.2d 556 (1948) and *Wells v. State Highway Comm'n*, 503 S.W.2d 689 (1973). Since the 1993 case of *Campbell v. Anderson*, 866 S.W.2d 139, the reasonable use rule now applies.

¹⁹ The case of *Wells v. State Highway Comm'n*, 503 S.W.2d 689 (1970), involved soil eroded from a highway construction site filling in and ruining a privately owned lake.

²⁰ The case of *King v. City of Rolla*, 130 S.W.2d 697 (1939), involved treated city sewage effluent contaminating a stream that was used as a supply source for livestock water by a downstream property owner.

²¹ "The public trust should exist in Missouri under the inheritance theory, because Missouri was created from the Louisiana Territory. Missouri has one case expressly acknowledging the existence of the public trust in navigable or floatable waters, *State ex rel. Citizens' Elec. Lighting & Power Co. v. Longfellow*, 69 S.W. 374 (1902)," but "no subsequent Missouri case has mentioned the public trust doctrine." —Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 461.

trusion onto the property of another. The activity that leads to a legally defined trespass is done where one can reasonably expect that intrusion by foreign matter will occur. Trespass is distinguished from nuisance when a physical intrusion is involved.¹⁹

"Unconstitutional taking" occurs when either federal or state government secures control over privately owned property without just compensation to the owner. Unconstitutional taking is prohibited by the Fifth Amendment to the U.S. Constitution and by Article I, Section 26 of the Missouri Constitution. Inverse condemnation, a form of unconstitutional taking, occurs where condemnation should have occurred but did not. It is inverse because it involves the filing of legal action by the condemnee rather than the condemnor.²⁰

Many times, in water pollution cases, courts do not cite a specific legal rule to support their decision. These are known as "no decisional theory cases." These types of decisions are not necessarily inconsistent with the other rules previously identified, nor are the decisions any less valid. Sometimes a court does not state the reasoning that it used to base its decision, rather simply stating that the pollution of a body of water is unlawful and granting relief.

Other legal decisional theories used in other states, but not in Missouri, include prior appropriation theory, groundwater allocation rules, statutory liability, and the public trust²¹ doctrine.

Case Law: Water Pollution

Three cases fairly well outline the rights, responsibilities and liabilities attached to water pollution. In *Somerset Villa, Inc. v. City of Lee's Summit*, 436 S.W.2d 658 (1968) the court held that a single polluter of a waterway can not be held responsible for the entire pollution in the stream from all sources.

A year earlier, in the case of *Reddick v. Pippin*, 421 S.W.2d 225 (Mo. 1967) the court determined that the point of origin must be shown, to attach liability to an upper landowner, for causing pollution of lower owner's watercourses and wells.

And, in *Haynor v. Excelsior Springs Light, Power, Heat and Water Co.*, 129 Mo. App. 691, 108 S.W. 580 (K.C. App. 1908) "The owner of a dominant estate," wrote the court, "has a right to use a stream flowing by his land to that of a servient proprietor in such a manner as not to interfere with its use by the servient owner, but has no right to pollute the stream and thereby work an injury to the servient estate."

Water Pollution, Individual Nuisance Actions

The three cases above were, in part, based on nuisance precedent established by earlier Missouri courts. Although respectively, 150 and 96 years old, the decisions reached in the two following cases are still relevant today. A very early Missouri case dealing with water pollution is *Smiths' v. McConathy*, 11 Mo. 517 (1848). Here, the Missouri Supreme Court held that an upper riparian utilizing a creek, which crossed the property of lower riparian landowner, as disposal for refuse from distillery and offal from hog lot, thereby rendering

stream unfit for consumption or use, creates a nuisance which is actionable in a court of law.

Schumacher v. Shawhan, 67 S.W. 717 (Mo. App. 1902) involved pollution of drinking and livestock water supply by food processing wastes. "The use of a stream for disposing of refuse of a distillery, in such a manner as not to pollute the water, provides no right by prescription to use it so as to pollute the water," wrote the court.

Water Pollution, Nuisance Actions and Industries

The case of *State ex rel. Wear v. Springfield Gas & Elec. Co.*, 204 S.W. 943 (Spr. Mo. App. 1918) affirmed the right of a public official to bring suit to enjoin a polluter of a public water supply, stemming from the industrial waste pollution of a stream.

Chapman v. American Creosoting Co., 286 S.W. 837 (Mo. App. 1926) concerned the contamination of ground and well water by creosote. In the case of *Chapman*, the court found the owner of a creosote plant negligent and liable for the pollution and damages to a spring, well, and property of the lower landowner, caused by waste escaping from a pond of creosote.

Hulshof v. Noranda Aluminum, Inc., 835 S.W.2d 411 (Mo. App. 1992) involved industrial discharge which overflowed into a drainage ditch which resulted in contamination of land and the killing of crops on a downstream farm. Evidence sustained the lower owner's claim that the industrial wastewater and discharges placed into the drainage ditch adversely affected and damaged crops and soil. The court enjoined the companies involved from discharging effluent from the industrial park into the public drainage ditch which crossed the lower owner's farm.

Water Pollution and Municipalities

The case of *Windle v. Springfield*, 275 S.W. 585 (Mo. App. 1925) involved the discharge of city sewage into a cave resulting in contamination of a nearby spring and a lake on a privately owned farm. The Court of Appeals allowed the decision of the lower court (that the city was not liable for damages) to stand, on the basis that the sewer discharge was not authorized by a duly adopted city ordinance, even though the discharge was made by the city and at the direction of the city council. The court noted that this decision was in conflict with the holding in another case, *Foncannon v. City of Kirksville*, 88 Mo. App. 279 (1901), in which a different appellate court affirmed that the city was liable for the damage caused, ruling, "the fact that it proceeded in directing such construction was irregular did not relieve it from damages resulting from the nuisance it caused as a result of the construction of a disconnected sewer system." (Neither case was appealed to the state's high court.)

The case of *King v. City of Rolla*, 130 S.W.2d 697 (Mo. App. 1939) involved treated city sewage effluent contaminating a livestock water supply. The court held that the municipality had the right to utilize a stream for sewage purposes and could acquire the right by condemnation proceedings.

In *Lewis v. City of Potosi*, 348 S.W.2d 577 (St.L. Mo. App. 1961), 317 S.W.2d 623 (Mo. App. 1958) the court held that pollution of a watercourse by a municipality is treated as nuisance, with the injured riparian landowner entitled to compensation.

Private Rights and Public Water Pollution

The case of *Leslie v. Mathewson*, 257 S.W.2d 394 (Spr. Mo. App. 1953) dealt with private versus public rights attached to water pollution. In this case, the court determined that a property owner is not entitled to maintain an action for public nuisance merely because his injury is greater in degree than that suffered by the general public; it is essential that his damage be different in kind from that suffered by the general public.

Landfills

The case of *Village of Claycomo v. Kansas City*, 635 S.W.2d 365 (Mo. App. 1980) resulted from leachate from landfill polluting groundwater. The court found that a landowner whose residence was adjacent to a creek across from a proposed landfill had standing to maintain action to enjoin an alleged private nuisance of proposed solid waste disposal against the city, however the landowner failed to state a claim against the Department of Natural Resources with respect to its issuance of permit to city to construct the landfill and alleged no facts showing a violation of any statutory provision which, if provided, could be a basis for ordering the permit revoked.

Frank v. Environmental Sanitation Management, Inc., 687 S.W.2d 876 (Mo. 1985) dealt with landfill leachate polluting a stream used for livestock water. "In a nuisance action," wrote the court, "evidence that leachate had escaped landfill, polluting stream, killing aquatic life, and preventing use of stream by downstream farmers was sufficient to support finding that landfill owner's use of land in a manner that created downstream leachate pollution was an unreasonable use of the land."

Interstate

The case of *Missouri v. Illinois*, 180 U.S. 208 (1900) involved a suit brought by the State of Missouri against the State of Illinois, City of Chicago and the Sanitary District of Chicago in which Missouri sought injunctive relief restraining the defendants from discharging sewage into waterways which eventually emptied into the Mississippi River, upstream from St. Louis. (See Figure 22, Location Map, the Chicago Sanitary and Ship Canal, Ill.)

Missouri alleged that the action of the defendants created a continuing nuisance, posed dangers to the health of the residents of Missouri, poisoned the water supply of residents of Missouri, and caused injury to that portion of the bed of the Mississippi River lying within the territory of Missouri. Illinois responded with numerous rebuttals, the most notable of which included; any health concerns that citizens of Missouri might have was a matter between those individuals and

the Sanitation District of Chicago, not being a matter between the states of Missouri and Illinois; the state of Missouri had suffered no harm; and as a result the U.S. Supreme Court lacked proper jurisdiction to hear the case.

The U.S. Supreme Court confirmed that it is the court of original jurisdiction in cases between the states where issues address federal common law, including water pollution of Mississippi River which is a navigable river of the United States and forms the boundary between Illinois and Missouri. The court also affirmed Missouri's standing to bring suit as a result of another state affecting the health and property of the citizens of Missouri, whom the State of Missouri rightfully represents in their persons and their interests. The Supreme Court, having addressed the most legally pressing points of law then turned to the specific facts of the case and ruled that Missouri had not provided satisfactory evidence that a nuisance actually existed, and returned the case to the litigant parties to provide additional evidence.²²

In the case of *Illinois v. City of Milwaukee*, 406 U.S. 91 (1972) the U.S. Supreme Court addressed the pollution of interstate navigable waters, Lake Michigan, by a political subdivision of another state, finding that such circumstances are actionable under the laws of the United States. Federal common law applies to air and water in their ambient or interstate aspects. The application of federal common law to abate the pollution on interstate or navigable waters is not inconsistent with federal enforcement powers. While state environmental quality standards and federal environmental protection statutes may be relevant but not conclusive sources of federal common law, they do not necessarily form the outer limits of such law.

The 1991 case of *Arkansas et al. v. Oklahoma et al.*, 503 US 91, stemmed from the construction of a new sewage treatment plant built by the city of Fayetteville, Arkansas. The city received a National Pollution Discharge Elimination System (NPDES) permit from the U.S. EPA to discharge the treated effluent from the new plant into a stream which fed the Illinois River in Arkansas and ultimately flowed across the Arkansas state line into Oklahoma. Oklahoma challenged the permit in Administrative Court alleging that the Fayetteville discharge violated Oklahoma water quality standards which allow no degradation of water quality in the upper Oklahoma reaches of the Illinois River.

The EPA remanded the permit, ruling that the Clean Water Act requires an NPDES permit to impose any effluent limitations necessary to comply with applicable state water quality standards, which the permit would violate if there were any detectable violations of the state of Oklahoma's water quality standards. In effect, the downstream state of Oklahoma was setting the water quality standards for a body of water which originated in Arkansas. The Administrative Law Judge made detailed findings with the EPA under the terms of the CWA's NPDES and concluded that the city of Fayetteville had satisfied the standard and sustained the permit's issuance.

²² This decision ultimately led to the later *Wisconsin v. Illinois* series of cases. These are discussed in the Boundary and Interstate Waterways section.

On appeal by Oklahoma a federal appellate court reversed the ALJ's decision, holding that the CWA does not allow a NPDES permit to be issued where a proposed effluent discharge source would contribute to conditions already in violation of water quality standards. It found the Illinois River already degraded and additional Fayetteville effluent would contribute to the river's deterioration.

Arkansas then appealed to the U.S. Supreme Court, which upheld EPA's action to issue the permit holding such action was authorized by the CWA. The court reasoned that, "where an interstate discharge is involved, both federal common law of nuisance and the affected state's common law are pre-empted. Affected states may not block a plan but rather must apply to EPA for ruling on the impact upon interstate waters."

Continuing, the Supreme Court found, "EPA has construed the CWA to require denial of a permit in accordance with an affected state's standards unless the affected state's water quality requirements can be assured. The EPA requirement that a NPDES permit applicant comply with an affected downstream state's water quality standard is a reasonable exercise of the statutory discretion given it by Congress. EPA is not bound to mandate the upstream state comply with the downstream state's standards. The CWA vests in the EPA and in states broad authority to develop long-range, area-wide programs to alleviate and eliminate existing pollution. Nothing in the act mandates a complete ban on discharges into a waterway that is in violation of existing water quality standards." Based upon the scientific research of the EPA at the direction of the ALJ, the court allowed the permit to stand and the Fayetteville treatment plant to begin operation.

SANITARY SEWERS, SEWAGE

The General Assembly of Missouri has addressed the need for sanitary sewers and sewage treatment many times during the 20th century, and has adopted numerous laws to allow state and local governments to plan, build, and pay for sewer systems and treatment plants. The term wastewater is synonymous with sewage. The occurrence of individual riparian landowners suffering damage to their property or to the beneficial use and enjoyment of their property has historically been a common basis for civil action in Missouri courts. Downstream landowners presently are afforded protection from the upstream release of sewage pollutants and contaminants, especially into watercourses, by statutory laws. Civil lawsuit recourse, as discussed in the preceding section of this chapter is available to landowners and riparians who suffer damages from sewage pollution.

Statutory Definition:

In Section 644.020, RSMo, the following definition appears:

(11) "**Sewer system**", pipelines or conduits, pumping stations, and force mains, and all other structures, devices, appur-

tenances and facilities used for collecting or conducting wastes to an ultimate point for treatment or handling.

²³ 64 Stat. 568.

Chapter 640, RSMo, creates the Department of Natural Resources (DNR). Sections 640.600 to 640.620 authorize grants in aid for rural communities' and districts' water supply and sewer systems, including engineering, legal, and construction costs.

Title VI of the *Revised Statutes of Missouri* (RSMo) consists of 22 chapters dealing with "County, Township and Political Subdivision Government." Chapter 70, in particular, sets out the "Powers of Political Subdivisions to Cooperate or Contract with Governmental Units." Sections 70.330 to 70.360, RSMo, authorize cities of 100,000 inhabitants or more to cooperate in regard to sewerage. These statutes were on the books when the laws were codified in 1919. Much of the wording has to do with financing such ventures.

In this same chapter, Sections 70.370 to 70.441, RSMo, establish the Bi-State Metropolitan Development District, a compact between Missouri and Illinois for the area around St. Louis. Among other things, this facilitates cooperation in regard to bridges, water supply, sewage disposal, wharves, docks, harbors, commodity storage for barge shipment, and other water-related matters. The articles of the interstate compact are provided in the law, along with additional powers, financial and contractual, of the district. The compact was approved by both states in 1949, and later approved by Congress.²³ This legislation enables the Greater St. Louis district to work on water-related problems such as water pollution abatement with greater cooperation among various local governments on both sides of the Mississippi River state boundary.

Title XV, RSMo, consists of ten chapters dealing with "Lands, Levees, Drainage, Sewers and Public Water Supply." Chapter 249 addresses "Sewer Districts in Certain Counties" and Chapter 250 deals with city or district water works and sewerage, including abatement of stream pollution. It is in Section 250.010 that we find the following definition.

2. When used in this chapter the term **"sewerage system"** shall mean and include any or all of the following:

(1) Sewerage systems and sewerage treatment plants, with all appurtenances necessary, useful, and convenient for the collection, treatment, purification and disposal in a sanitary manner of the liquid and solid waste, sewage, and domestic and industrial waste of any such municipality; and

(2) Shall include combined storm sewer and sanitary systems;

(3) The term shall also mean and include the construction of such stormwater sewers as, in the judgment of the governing body of any such city, town or village or sewer district, may be necessary or desirable in order to relieve sewers carrying sanitary and storm water loads of undue loads or in order to permit the efficient operation of any such sanitary sewers for the collection, treatment and disposal of sewage and domestic or in-

²⁴ "the decision was rendered, not upon intellectual conviction that the decree was right, but merely to facilitate further proceedings." - Gifis, p. 164.

dustrial waste including combined storms and sanitary sewerage system.

This and other parts of Chapter 250 were enacted in 1951, and were held constitutionally valid in the case of *City of Maryville v. Cushman et al.*, 363 Mo. 87, 249 S.W.2d 347 (1952). Unlike the federal court system, the Missouri court system will issue an opinion on the constitutionality of a statute, upon request.

In this case, the City of Maryville petitioned for a *pro forma*²⁴ decree authorizing the issuance and declaring the validity of combined waterworks and sewer system bonds. Ray Cushman and others, taxpayers, water users, and sewer users in Maryville, intervened, their petition asking that the bonds be held invalid. The Circuit Court of Nodaway County declared the bonds valid, and the intervenors appealed.

The Supreme Court of Missouri heard the case *en banc*, and affirmed the circuit court judgement. The Supreme Court held, "The Constitution of Missouri is a limitation upon the power of the General Assembly, and is not a grant of power to it, and except as limited by state and federal Constitutions, power of General Assembly is substantially unlimited and absolute." The court cited precedent in *State ex rel. Randolph County v. Walden*, 206 S.W.2d 979, and *Kansas City v. Fishman*, 241 S.W.2d 377, to support its position.

Title XVI, RSMo, is a part of the statutes that deals with the several topics of Conservation, [Natural] Resources, and Development. Chapter 256, in particular, addresses Geology, Water Resources, and the Geodetic Survey. Sections 256.200 *et seq.*, govern the Clean Water Commission of the DNR, which is concerned primarily with water pollution abatement, and with the Water Development Fund administered by the Commission.

Also, part of Title XVI, RSMo, Chapter 260, covering Environmental Control, serves to abate water pollution through the Environmental Improvement and Energy Resources Authority (EIERA), and DNR programs of Solid Waste Management and Hazardous Waste management. Section 260.095, specifically authorizes how the EIERA may enter into contracts or agreements for the purpose of preventing or reducing pollution or providing water facilities or sewerage.

Title XII, RSMo, on "Public Health and Welfare," also addresses Sanitary Sewers and Sewage. Among 25 chapters in this title, Chapter 204 covers "Common Sewer Districts in Certain Areas," including how they are formed, how they are to be governed, and how they are to be financed. This section also provides for how to form them in unincorporated subdistricts. Many provisions, formerly in Chapter 204 under the subtitles of "Missouri Clean Water Law" and "Water Pollution Bonds," were transferred to Chapter 644 in 1986.

Chapter 248, RSMo, covers "Sanitary Drainage Districts—Cities over 300,000 Inhabitants and Adjoining Counties"; their establishment, their powers, plan approvals, and financing. Most of the law covers financial and governance matters.

Chapter 249, RSMo, covers "Sewer Districts in Certain Counties," including St. Louis County, and other counties. Again, most of the law covers financial and governance matters.

Title XXV, RSMo, on "Incorporation and Regulation of Certain Utilities and Carriers", includes Chapter 393, on "Gas, Electric, Water, Heating and Sewer Companies." This chapter covers utility companies, including water and sewer companies, spelling out their powers, regulations governing them, joint municipal corporations, and related matters. Again, the legislation mostly concerns administrative details.

²⁵ See also "Recent Legislative Action" in the Appendix.

On-Site Sewage Disposal

On-site sewage disposal systems are regulated under Sections 701.025-701.039, RSMo. The Missouri Department of Health administers these provisions of the law to prevent water pollution.²⁵

Definitions

The statute defines on-site sewage disposal, sewage, and waste as follows:

(8) **"On-site sewage disposal system"**, any system handling or treatment facility receiving domestic sewage which discharges into a subsurface soil absorption system and discharges less than three thousand gallons per day;

(12) **"Sewage" or "domestic sewage"**, human excreta and wastewater, including bath and toilet waste, residential laundry waste, residential kitchen waste and other similar waste from household or establishment appurtenances.

(15) **"Waste"**, sewage, human excreta or domestic sewage.

There are numerous methods of on-site sewage disposal, for private residences, including what is known as a septic tank and leach field. Alternative technologies also exist. The critical design factor for an on-site sewage disposal system (as defined) is the nature of the soil. Heavy, clay soils do not serve well because the wastewater cannot pass between the tightly packed particles, and karst (cavernous) areas also do not serve well, because the effluent is quickly transported to underground aquifers, causing contamination of groundwater. In karst areas, leachate from septic systems finds its way into underground water, which is contrary to law. (Sections 578.200 through 578.225, RSMo, known as the "Cave Resources Act," also are intended to protect cave streams from contamination.) (See Figure 5)

Single-family residence lots larger than three acres (except lots adjacent to certain lakes) are exempt from the provisions of the on-site sewage disposal law by Section 701.031, RSMo. Section 701.033, RSMo, gives the Department of Health the power and duty to promulgate such rules and regulations as are necessary to carry out the provisions of the law. The Department of Health may authorize trial or experimental use of innovative systems for on-site sewage disposal, after consultation with the staff of the Missouri Clean Water Commission.

Cities and counties may adopt more stringent standards than the state standard (Section 701.047, RSMo), and contractors must be trained and registered with the Department of Health (Sections

701.053-054, RSMo). Property owners may install, modify, or clean their own systems without a permit (Section 701.055, RSMo).

Case Law: Sewers – Private and Public Rights

The case of *Edmondson v. City of Moberly*, 11 S.W. 990 (Mo. 1889) involved city sewage effluent pollution of a stream. The court held that a city authorized by its charter to build and maintain a sewage system can not, under subsequent city ordinance, arrange the drains so as to create an unnecessary nuisance, injurious to private rights of downstream property holders.

In *Schoen v. Kansas City*, 65 Mo. App. 134 (1895) dealing with city sewage effluent contamination of a stream, the court held that the right to damages from a public nuisance is not affected by the fact that the injured party's property may not abut on the place where the nuisance originated.

In a series of three cases, covering thirteen years, the courts addressed water pollution, judicial relief, public interest versus private nuisance, and the pollution of watercourses as necessary to protect public health. In the first case, *Smith v. City of Sedalia*, 152 Mo. 283, 53 S.W. 907 (1899), the court determined that the fact that sewers are necessary to a city, and that the statute directs that they shall follow as near as practicable natural drainage, does not authorize a city to empty its sewers on the land of an individual, to his damage. A city does not acquire prescriptive rights to discharge its sewage, to a downstream owner's injury, into a stream flowing through the farm of the lower riparian, because private sewers, which were no part of the city's sewers, had polluted the water of the stream.

Following, in *Smith v. City of Sedalia*, 81 S.W. 165 (Mo. 1904) the court held that the riparian owner claiming injury and harm resulting from pollution of water in stream flowing in water way across his property must show evidence that facts substantiate the claim.

Finally, in *Smith v. City of Sedalia*, 244 Mo. 107 (1912) the court held that a lower riparian landowner can not recover damages from a city for discharging sewage into a creek upon his property and also an injunction to restrain the nuisance, the injury being of a permanent character. A recovery of damages for the appropriation of the creek by the city has the effect of confirming the right of the city to discharge sewage into the stream as effectually as if the right had been obtained through condemnation.

The case of *City of Chillicothe v. Bryan*, 77 S.W. 465 (Mo. App. 1903) involving an individual who permitted the city to construct the outlet of a sewer on his land could not, reasoned the court, obstruct the outlet and inflict damage on the persons connecting their residences with the sewer. This being done on his and the city's representations that they had the right to do so, though the sewer constituted a nuisance and was constructed under the promise, by the city, that it would not be a nuisance. The court also held that a city does not acquire by prescription the right to maintain a sewer on a person's

land because it had maintained it for a period of over ten years, where such maintenance was by permission alone.

The case of *McCleery v. City of Marshall*, 65 S.W.2d. 1042 (Mo. App. 1933) addressed pollution of a stream which was caused by city sewage effluent. The court held that the city, in construction of the sewer system, created a permanent nuisance by allowing effluent to flow into, and thereby pollute, a stream which crossed the property of a lower land owner.

Riggs v. City of Springfield, 344 Mo. 420, 126 S.W.2d 1144 (*En Banc* 1939) addressed the distinction between temporary and permanent pollution of watercourse by municipal sewage. The court held that the right of the city to empty its sewage into a stream is merely a legislative license, revocable whenever public health and safety require.

Stewart v. City of Springfield, 350 Mo. 234, 165 S.W.2d 626 (1942) resulted from untreated municipal sewage being released into a watercourse. The discharge, by a municipality, of sewage on the property of an individual or its discharge into a stream so as to pollute its waters and lessen or destroy the value of the stream itself, or of private property situated thereon, is considered compensable under provision of eminent domain. A city is not privileged to create or maintain a public nuisance in the exercise of its use of an easement.

Newman v. City of El Dorado Springs, 292 S.W.2d 314 (Spr. Mo. App. 1956) also dealt with municipal sewage pollution of a watercourse. The court held that the municipality has right to condemn and to appropriate, under eminent domain, the use of a watercourse for purpose of disposal of products of operation of a sewage plant, and is liable for a nuisance if such action injures a lower riparian owner.

The case of *Clark v. City of Springfield*, 241 S.W.2d 100 (Spr. Mo. App. 1951) dealt with the pollution of diffused surface waters by a city sewer which overflowed onto private property. Discharge of sewage upon a person's premises may constitute a nuisance. Home owners are entitled to comfortable use and enjoyment of their homes without interference from a nuisance.

Private Damages from Municipal Sources

In the case of *Kellogg v. City of Kirksville*, 132 Mo. App. 519, 112 S.W. 296 (1908), 149 Mo. App. 1129 (1910) city sewage effluent polluted the drinking and livestock water supply of a downstream landowner. Here, the court held, where a city collects its sewage, and discharges it in a volume into a stream, whereby a riparian property owner is injured, the owner may recover for a permanent injury to the property, and depreciation in the value of the land caused by the nuisance is a proper element of the damage.

Kent v. City of Trenton, 48 S.W.2d. 571 (Mo. 1931) also involved city sewage effluent discharge pollution of drinking and livestock water. The court found that "where the city discharged sewage on

land from permanent structure a cause of action arose immediately and accrued to the owner of land, however, was not transmitted to subsequent grantees."

King v. City of Rolla, 130 S.W.2d 697 (Mo. App. 1939) concerned the treated city sewage effluent contamination of a livestock water supply. The court held that the municipality had the right to utilize a stream for sewage purposes and could acquire the right by condemnation proceedings.

The case of *Luckey v. City of Brookfield*, 151 S.W. 201 (Mo. App. 1912) involved city sewage effluent discharge polluting livestock water supply. The court determined that the injury suffered by the downstream owner from the pollution of a stream flowing through the land of an individual by construction by city of a sewer system emptying into the stream is permanent, and inflicts upon the landowner upon completion of the system.

Fansler v. City of Sedalia, 176 S.W. 1102 (Mo. App. 1915) also involved city sewer effluent pollution of livestock water. The court held that a city constructing a sewer emptying into a stream above the land of a riparian owner does not thereby commit a trespass on the land, though the flow of sewage with the waters of the stream may invade a substantial right of the owner. Maintenance of that sewer, by the city, for more than ten years does not afford the city by prescription of right to maintain the nuisance to the lower owner.

STORM SEWERS AND STORMWATER CONTROL

Storm sewers (also called storm drains), unlike wastewater sewers, are built for the purpose of ridding an urban or suburban area of excess surface water, thereby reducing occasions of minor flooding. In most cities, stormwater control systems are not designed to handle extremely heavy flows, in which situations, puddling can occur in low-lying areas. The old concept was that it is too expensive to design and build for cloudburst storm events. This concept is being replaced, because today it is too expensive to clean up and fix up after a flood.

A problem with stormwater runoff is that numerous contaminants can be washed into the storm sewer with the stormwater, and are usually concentrated in the "first flush" of runoff from streets, parking lots, and vacant parcels of land. These contaminants include oil and other automobile-source contaminants, including lead, solvents, antifreeze, and solid refuse of many kinds. Stormwater runoff control has become a major contentious issue in most urban areas. Where development is not regulated, the increased stormwater runoff from new paving and roofing can result in the flooding of established areas downhill.

In older cities, storm drains often were piped into sanitary sewers, where the combined flow usually exceeded capacity when it rained. Separation of storm sewers from sanitary sewers is an expen-

sive capital program. Cases concerning municipal storm sewers are not cited separately in this section because, as this topic relates to pollution, they would in theory be legally treated as sanitary sewers. Cases on sanitary sewers are found in the preceding section dealing with sewers and sanitary sewers. Otherwise, storm sewers which are not owned and maintained by a municipality, and are a source of downstream pollution would be treated as water pollution under common law, which is addressed in the first section of this chapter. Under this circumstance, the doctrine of reasonable use would be applicable, and civil suit could be instituted under the appropriate decisional basis for legal action. The rule of comparative reasonable use applies to both upstream (for watercourses) and upper landowners (for surface waters) as well as downstream and lower landowners.

A Capital Improvements Sales Tax, Certain Counties, is the topic of Sections 67.700 to 67.727, RSMo, with Section 67.713 designated "County-municipal storm water and public works trust fund created-tax revenue, how distributed...". This is especially for St. Louis County storm sewer construction.

A Storm Water Control and Public Works Projects Sales Tax is the topic of Section 67.729, RSMo, especially for counties other than St. Louis County. Also, a Capital Improvements Sales Tax for Jackson County is the topic of Sections 67.730 to 739, RSMo, without mentioning stormwater runoff in particular.

Chapter 249 of the Revised Statutes of Missouri (RSMo) provides the enabling legislation for the formation of sewer districts in counties. The Metropolitan Sewer District (MSD) of St. Louis and St. Louis County is authorized under Section 249.010, *et seq.*, RSMo, pursuant to the Missouri Constitution, Article VI, Section 30 (a) (5). MSD handles stormwater sewers as well as sanitary sewers and sewage treatment.

Section 94.413, RSMo, authorizes a "city stormwater and public works sales tax trust fund" for carrying out stormwater projects in cities of 100,000 people or more.

The topic of Chapter 644, RSMo, is Water Pollution. Sections 644.006 to 644.141 are known as the Missouri Clean Water Law. Subsequent sections deal with Water Pollution Control Bonds. The Clean Water Commission, DNR, DEQ, Water Pollution Control Program (WPCP), administers these provisions of the law. (See Pollution, this chapter.)

Permits and Regulations

Section 644.016 (8) defines "**Point source**" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged."

There has been debate over whether or not to consider storm sewers "point sources" of pollution, which would require permits. Other "pipe" discharges of water or wastewater require permits from

²⁶ See also "Watersheds," in the Water Rights section.

the Department of Natural Resources. Stormwater runoff in rural areas generally is considered "nonpoint sources (NPSs)" of pollution, and does not require permits. These non-point sources of pollution are reduced by what are termed "best management practices (BMPs)" of rural land operations, such as farming, ranching, and forestry.

Permits for some activities that produce nonpoint source pollution ensure that the waters of the state are protected against stormwater discharges coming from a wide variety of sites. These sites include coal mines, limestone quarries, clay pits, petroleum storage areas, and composting sites. DNR regulations also require construction of containment structures for businesses that store and handle bulk quantities of liquid chemicals such as petroleum, fertilizers, or pesticides.

Stormwater Runoff

Stormwater runoff usually is treated as nonpoint source (NPS) pollution, due to contaminants found on urban streets, roofs, and parking lots, golf courses and playing fields, and rural lands, including farm fields. The use and registration of pesticides used on many farm fields and golf courses are spelled out in Chapter 281, RSMo. The protection of the environment in general and of water in particular is the purpose of this chapter. Pesticides are commonly used in agriculture, and some pesticides are known to be carried into water supplies by stormwater runoff. Maximum contaminant levels (MCLs) in drinking water supplies are established by the Safe Drinking Water Commission of the DNR, Section 640.105, RSMo. MCLs are of concern to the Missouri Departments of Conservation, Health, Natural Resources, and Agriculture, as well as to federal agencies, because of the effects of toxic substances on both the human and the natural environment.

Chapter 278, RSMo, is on Soil and Water Conservation. Section 278.010 accepts the provisions of "The [federal] Soil Conservation and Domestic Allotment Act" of 1936, which includes the protection of rivers from sedimentation (a form of pollution) from soil erosion. The Curators of the University of Missouri, acting through the Extension Service, are designated to carry out the provisions of this part of the law.

Sections 278.060 to 278.155 are known as "The Soil and Water Conservation Districts Law." This law establishes the Soil and Water Districts Commission, which governs the Soil and Water Conservation Program. Other parts of Chapter 278, RSMo, deal with watershed protection and flood prevention.²⁶

Missouri is a leader in national soil conservation efforts. In 1984, 1988, and 1996, Missourians voted for a one tenth of one percent sales tax to support soil and water conservation efforts and state parks. This tax revenue is added to a mix of federal, state, and local efforts to conserve soil.

Case Law

In the case of *Casanover v. Villanova Realty Co.*, 209 S.W.2d 556 (St.L. Mo. App. 1948) the court ruled that a land owner may use his land in any lawful manner for any lawful purpose, and has the right to alter the grade or slope of the land in the absence of contrary legal restriction. The flow of surface waters, including mud and silt from the higher to the lower tract which damages the property of the lower, does however, constitute trespass.

Previously, in *Joplin Consol. Mining Co. v. City of Joplin*, 124 Mo. 129, 27 S.W. 406 (1894) the court had held that the proprietor of land through which a stream flows cannot insist that the water shall come to him in the natural pure state. "He must submit, and that, too, without competition, to the reasonable use of it by upper proprietors, and he must submit to the natural wash and drainage coming from towns and cities."

UNDERGROUND WASTE DISPOSAL

Underground waste disposal may include sanitary landfill operations, septic tank leach fields, and the burial of dead livestock. Any type of underground waste disposal has the potential for contamination of surface and groundwaters. Waste disposal is regulated under state and federal statutes. Individuals have civil court recourse for damages or injuries they may suffer from contamination of water from underground waste disposal. Hazardous waste and solid waste are treated separately in the statutes.

Case Law

In the 1980 case of *Village of Claycomo v. Kansas City*, 635 S.W.2d 365, leachate from landfill polluted adjacent groundwater and a domestic water well. The court held that the land owner whose residence was across a creek from a proposed landfill had standing to maintain action to enjoin the alleged private nuisance of proposed solid waste disposal against the city, but failed to state a claim against the Department of Natural Resources with respect to its issuance of permit allowing the city to construct landfill. Nor did the plaintiff allege any facts showing a violation of any statutory provision which, if provided, could be a basis for ordering the permit revoked.

Waste Disposal Wells

The construction or use of a waste disposal well (differentiated from a septic tank or a heat pump well) is forbidden by Section 577.155, RSMo. No civil case law was identified as specifically addressing this topic since it is a statutory law.

²⁷ See *Missouri Water Resources Law 1998 Annual Report* for more information.

Wastewater Treatment

The Missouri Clean Water Law is comprised of Sections 644.006 through 644.141, RSMo. Important sections include 644.011, a statement of policy by the General Assembly, written into law to guide the execution of the statute and regulations adopted pursuant to the statute; 644.016, which defines terms; and 644.021, which creates the Clean Water Commission to supervise the administration of the Clean Water Law.

Definitions of significance in Section 644.016 include the following:

(2) **"Discharge"**, the causing or permitting of one or more water contaminants to enter the waters of the state.

(13) **"Treatment facilities"**, any method, process, or equipment which removes, reduces, or renders less obnoxious water contaminants released from any source.

Wastewater which empties into "waters of the state" or "waters of the United States" must meet certain standards, under the Missouri Clean Water Law and the federal Clean Water Act. Section 644.051, RSMo, spells out certain acts forbidden by law, relative to causing or allowing pollution, and violation of permits. In addition to certain criminal penalties in the above section, administrative penalties are authorized in Section 644.079. At the same time, Section 644.101 provides for the state to offer financial assistance for wastewater treatment projects.

Treatment Nomenclature

There are generally three stages of wastewater treatment used in public sewer systems: Primary, secondary, and tertiary. There also can be pre-treatment, usually a stage performed by an industrial plant, prior to delivering wastewater to a public sewer (defined at Section 644.016, RSMo). There can also be post-treatment, such as provided by constructed wetlands, that "finish" the purification of effluent. Constructed wetlands for wastewater treatment must be permitted by the WPCP, DEQ.

Under the terms of Sections 644.500 - 644.564, RSMo, the Department of Natural Resources administers a program that distributes grants and low-interest loans for the construction of wastewater treatment facilities. The funds come from the state through Water Pollution Bonds, authorized by the Missouri Constitution, and from the U.S. Environmental Protection Agency.²⁷

WATER TESTING

Sections 640.100 to 640.140, RSMo, set up the Safe Drinking Water Commission of DNR's Public Drinking Water Program. Some of the purposes include water testing, requirements for lead-free construction, and repair of systems.

DNR and the Missouri Department of Health are authorized under Section 640.100, 10, RSMo, to test water samples at the request of

any supplier. In the DNR, this is done by the Environmental Services Program, and by the Public Drinking Water Program, DEQ. The Department of Health performs microbiological water testing under a contract with DNR.

There were no cases identified which specifically related to water testing.

²⁸ Division of Geology and Land Survey, DNR, Rolla, Mo., January, 1998, data.

WELLHEAD PROTECTION

Wellhead protection focuses on preventing surface contamination from entering wells, and on the protection of producing aquifers. Statutes aim at identifying and educating well-drillers, and registering drilled wells and installed well pumps. A total of 8,369 wells were reported drilled in 1997, of which 7,065 were water wells.²⁸

Sections 256.435 *et seq.*, RSMo, establish a "Multipurpose Water Resources Program" in the DNR, for the purpose of helping with long-term public water supply and flood control water storage projects. This is a recent law, enacted in 1992. Plans are drawn on a project basis.

The "Missouri Water Well Drillers' Act," Sections 256.600 through 256.640, establishes the Well Installation Board, establishes permits for well installation contractors and pump installation contractors, and sets up a registry for wells drilled and pumps installed in accordance with the law. This 1985 legislation was enacted for the purposes of assuring that water wells are properly constructed to assure production of safe supplies of drinking water. These sections have been amended. Throughout this part of the law, Sections 256.603, 256.614, 256.615, and 256.628 all discuss the plugging of abandoned wells for public health and safety.

Sections 256.641 *et seq.*, create a Southeast Missouri Regional Water District in the Bootheel counties of Missouri. Mostly, the quality and quantity of groundwater in the district, and the use of irrigation wells are the topic of this 1992 legislation.

Case Law

Cases that address wellhead protection normally would be "reactive" in the sense that under the rules of civil law, the showing of a damage is the basis for bringing a (tort) suit. Normally, a suit requesting an injunction would be heard in the circuit court, and would not be appealed. Where there has been pollution of groundwater, the cases have been cited under the water pollution section at the beginning of this chapter. No cases were identified that were brought to prevent contamination of a well.

ABANDONED WELLS

Abandoned wells can become problems when they are not properly closed off to children, animals or contaminants. In the 1980s, there were several instances of small children falling into wells in other states, leading to the enactment of Section 256.615, RSMo, and other sections, in 1991. This section 256.615 requires the plugging of wells abandoned after August 28, 1991. Not only is there a public safety issue, but also there is a public health issue. Open wells can allow surface contaminants to directly enter the groundwater system through stormwater runoff over the land surface. Section 256.628, RSMo, forbids a public water supplier to provide service to a location previously served by a well unless any known abandoned wells on the property have been plugged (or will be plugged within 90 days), and/or any wells on the property are still in use and will be plugged when no longer in use.

Section 256.603, RSMo, contains the following definition:

(1) **"Abandoned well"**, a well shall be deemed abandoned which is in such a state of disrepair that continued use for the purpose of thermal recovery or obtaining groundwater is impractical and which has not been in use for a period of two years or more. The term, "abandoned well" includes a test hole or a monitoring well which was drilled in the exploration for minerals, or for geological, water quality or hydrologic data from the time that it is no longer used for exploratory purposes and that has not been plugged in accordance with rules and regulations pursuant to Sections 256.600 to 256.640 (RSMo).

Pursuant to this legislation, administration of the terms of this law is done by the Missouri Department of Natural Resources (DNR), Division of Geology and Land Survey (DGLS). No cases were identified that specifically addressed groundwater pollution as a result of an abandoned well, however, this is likely to be a topic addressed by the judiciary in the future.

CONCENTRATED ANIMAL FEEDING OPERATIONS

In its 1996 session, the Missouri General Assembly combined and adopted several bills governing Concentrated Animal Feeding Operations (CAFOs). These bills became Sections 640.700 through 640.755, RSMo. The law expires five years from enactment. The terms of the statute are administered by the Clean Water Commission of DNR.

Among other things, the Missouri Department of Natural Resources was given authority to promulgate rules regulating the establishment, permitting, design, construction, operation, and management of any Class I CAFO. A Class I CAFO is defined as having a design capacity of 1,000 animal units or greater. This is the equiva-

lent of 1,000 beef cattle, 700 dairy cattle, 2,500 swine over 55 pounds each, 15,000 nursery pigs under 55 pounds each, 30,000 laying hens, 55,000 turkeys, or 100,000 broiler chickens. Class IA CAFOs have 7,000 animal units (17,500 swine and so on, as above). A Class II CAFO of between 300 and 999 animal units also must have a permit from DNR if they discharge directly into a stream that passes through the animal feeding area. Operations smaller than Class II are considered nonpoint sources of pollution under the rules.

Such rules may require the drilling of water quality monitoring wells in certain locations, when Class IA CAFOs are located in hydrologically sensitive areas (Section 640.710.1, RSMo). Sensitive areas are defined in Section 640.703 (10), RSMo, as "areas in the watershed located within five miles upstream of any stream or river drinking water intake structure, other than those intake structures on the Missouri and Mississippi rivers."

Prior to the enactment of this legislation, there was public concern over several failures of CAFO animal waste (manure) stabilization lagoons, which resulted in the pollution of many streams and fish kills. Between late August and late September, 1995, there were eight manure spills, with 266,989 fish killed, according to MDC estimates. All of the spills occurred at CAFOs that were hog facilities in northern Missouri.²⁹ (See Figure 11, a CAFO.)

²⁹ Data from the Water Pollution Control Program, DEQ.



Figure 11. A Concentrated Animal Feeding Operation. This is a CAFO. In this case, laying hens are the animals confined in the buildings. Lagoons are located to the right side. Photo from DEQ/WPCP.

³⁰ Data from the Water Pollution Control Program, DEQ.

One hog is roughly the size of two humans in the amount of waste produced. So, a class IA CAFO with 17,500 swine roughly produces the manure equivalent of a city of 35,000 people.³⁰ DNR figures show that one swine mega-farm operation produces as much manure as 4.7 cities the size of Columbia, Mo., 1990 population 69,101, the equivalent of 320,000 human beings.

Before this legislation, CAFOs were being regulated by the rules and regulations of the Clean Water Commission of DNR pursuant to Section 644.051.2, RSMo, and water contaminants (manure slurry) were to be contained on site and appropriately land-applied. The new legislation, Section 640.730, RSMo, requires the operators of certain CAFOs to have failsafe containment structures or earthen dams capable of holding a volume equal to 24 hours of flushing manure slurry (in case of a lagoon system failure).

Odor control at CAFOs also has been a public concern. The 1996 statute, at Section 640.710.2, RSMo, requires new CAFOs to be set back from public buildings or residences. These buffer distances range from 1,000 to 3,000 feet, depending on the size of the operation. The legislation also mandates operator inspections and record keeping, and provides for DNR inspections (Section 640.725.1, RSMo).

Releases ("spills") are violations of Sections 644.051.1 and 644.076, RSMo. Chapter 644 is called the Missouri Clean Water Law. (There also is a federal Clean Water Act, under which Missouri DNR has certain authority, as delegated by the U.S. Environmental Protection Agency [EPA].) Any unauthorized discharge (failure, release, spill) from a flush system animal waste wet handling facility that crosses the property line or enters waters of the State of Missouri must be reported to DNR, and to all adjoining land owners within 24 hours (Section 640.735, RSMo). Manure lagoon design must meet criteria published by the DNR with the University of Missouri Cooperative Extension Service and the Natural Resources Conservation Service, USDA, as cooperating agencies. These criteria include the 24-hour slurry volume, and the 25-year, 24-hour storm rainfall amount, which in most of northern Missouri is between five and a half and six inches of rain.

Case Law: Feedlot Sewage

In the case of *Bower v. Hog Builders, Inc.*, . 461 S.W.2d 784 (Mo. 1970) feedlot sewage lagoon effluent polluted the land and the livestock water supply on adjoining private property. Water contaminated from hog pens and sewage lagoons, accumulated by upper owner on his property as result of his inaction, flowed onto the lower owner's land. The effluent contaminated lower owner's pond, stream, ditch, the surface of his land, and his well water. The well water was used for domestic supply. The court held that reasonable use of property does not entail causing interference with another's reasonable use and enjoyment of his property.

Because of the recent advent of large scale CAFO's in Missouri, lawsuits involving CAFO's are presently pending. The suits are predominately based on state and federal water and air pollution allegations. One should expect to see more legislative and judicial activity on this topic.

LEAKING / UNDERGROUND STORAGE TANKS³¹

Until recently, underground storage tanks were in common use, especially for the storage of gasoline at automobile service stations. Some buried tanks had been in use for decades, many in questionable condition. There have been numerous instances of gasoline, from leaking underground storage tanks, entering the groundwater and polluting wells.

Chapter 261 creates the Missouri Department of Agriculture and spells out its powers and duties (261.023) including the responsibility for inspecting and regulating gasoline and petroleum pumps. Section 640.430, RSMo, names the Department of Agriculture to be a member of the Water Resources Interagency Task Force. The Agriculture Department also has certain duties related to underground storage tanks (UST), given in Chapter 319, RSMo including the inspection of underground storage tanks, Section 319.117 RSMo.

Underground Storage Tanks (UST) are regulated by the Department of Natural Resources (DNR) under Sections 319.100 to 319.139, RSMo. Rules of the DNR in regard to UST are found in Chapter 10 of the Code of State Regulations (10 CSR 20), adopted pursuant to Missouri Clean Water Law, Section 644.026, RSMo, and the Missouri Hazardous Waste Management Law, Sections 260.350 - 260.552, RSMo.

Leaking underground storage tanks (formerly called LUST, but this term no longer is commonly being used), and spills from ruptured pipelines have been significant events in Missouri. There are numerous pipelines from Texas and Oklahoma across Missouri, running toward the Northeastern States and Canada. The risk of water pollution is very substantial. Cleanup of tank and pipeline leaks and spills has proven very costly in the past.³²

Case Law

The case of *Bollinger v. Mungle*, 175 S.W.2d 912 (St.L. Mo. App. 1943) is fairly typical of pollution resulting from storage tanks. It dealt with the pollution of groundwater from a gasoline storage tank, which contaminated the well water on land immediately adjoining, but separated by roadway. The well was used by the property owner for his for domestic supply. The court held that this was an act of negligence on the part of the gasoline storage tank owner and the injured was entitled relief.

³¹ Please refer also to the *Missouri Water Resources Law 1997 Annual Report* for further information concerning Storage Tanks and Pollution.

³² See article by Orr, Connie, "When Oil and Water Didn't Mix," in *Missouri Resources*, Summer, 1997, Vol. 14, No. 2, an article on Chariton River and Gasconade River oil pipeline ruptures and consequent damage and clean-up.

WATER SUPPLY

Historically, Missouri's case laws have focused on property owners' rights, and in particular the right of a landowner to protect his land and private property from too much water. In more recent times, spurred chiefly by population, industrial and agricultural growth trends, this focus is shifting to that of access to, and use of available water. There are concerns with the overuse and lack of groundwater for agricultural use and public drinking water supply in certain areas of the state.¹ Missouri also is in the midst of a controversy involving the federal government and other states concerning seasonal flows of the Missouri River.² These concerns are compounded by cycles of drought.³ Water supply will more than likely be an increasing topic of future discussion in both the legislature and the court room.

CLASSES OF WATER AND THEIR USE AS SUPPLY SOURCES

As noted in the Overview, above, Missouri courts, through case law, have identified three broad classes, or types, of water: Watercourses, surface water, and groundwater. Surface water can be further defined as diffused surface water⁴ or floodwater⁵ and groundwater can be further categorized as percolating groundwater or as an underground stream. To understand and appreciate the distinctions between the various classes of water, and as a result how they can be used, one must rely upon court decisions. It is case law which provides specific guidance on classes of water and their attendant uses. To the extent that classes of water are addressed by statutes, they are generally inconsistent with case law classifications.⁶

Water use (i.e. water supply), from any of these sources, is largely dependent upon what the courts have defined as a riparian right. Under the riparian doctrine, each riparian landowner has the right, subject to its reasonable use by other riparian owners, to have a watercourse flow across his land in undiminished quality and quantity. He also has the right to the reasonable use of the waters in that stream. He has the responsibility to lower riparians to see that his use does not unreasonably diminish the quality or quantity of the water flow

¹ DuCharme and Miller, *Water Use of Missouri*, Missouri State Water Plan Series Volume IV, Water Resources Report Number 48, 1996, pp. 25-38.

² DuCharme and Miller, pp. 67-69; Vineyard, *Water Resource Sharing: The Realities of Interstate Rivers*, Missouri State Water Plan Series Volume VI, Water Resources Report Number 50, 1997, pp. 9-11, 19-20, 23-33; and *Missouri Water Resources Law 1997 Annual Report*, pp. 13-14.

³ Drew and Chen, *Hydrologic Extremes in Missouri: Flood and Drought*, Missouri State Water Plan Series Volume V, Water Resources Report Number 49, 1997, pp. 39-64.

⁴ Water that is diffused over the surface of the ground before it enters a watercourse.

⁵ Water that has overflowed the banks of a stream and spread out over the surface of the ground.

⁶ Statutory law includes water in rivers as surface water (RSMo 640.403), while case law specifies that waters in rivers are watercourses (*Keyton v. MCT*, 224 S.W.2d 616 (1950) and surface water as water which spreads out over the surface of the ground, lacking or severed from a main current or channel (*Benson v. Chicago & Alton R.R. Co.*, 78 Mo. 504 (1883), *et al.*).

⁷ As per judicial definition of surface waters rather than statutory definition.

⁸ In *Higday v. Nickolaus*, 469 S.W.2d 859 (1971), the Missouri Supreme Court rejected the absolute ownership rule stated in *Springfield Waterworks Co. v. Jenkins*, 62 Mo. App. 74 (1895).

⁹ *Heins Implement Co. v. Mo. Hwy. Comm'n*, 859 S.W.2d 681, applied the comparative reasonable use rule to drainage waters and *Campbell v. Anderson*, 866 S.W.2d 139, applied the comparative reasonable use rule to floodwaters.

¹⁰ Dewsnap and Jensen, p. 437.

¹¹ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 459.

¹² Section 644.018, RSMo, enacted in 1998, provides a legislated meaning of "reasonable use," as it relates to land use in a floodplain. This is discussed more fully in the Water Rights section.

¹³ Please refer to pages 2-4 in the Overview for a detailed discussion on the common law defined types of water.

¹⁴ Vandike, James E., *Surface Water Resources of Missouri*, Missouri State Water Plan Series Volume I, Water Resources Report Number 45, Mo. Dept. of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1995, page 28.

¹⁵ Navigation and commerce are discussed in the section on Water Use.

to them. The extent of reasonable use of groundwaters or surface waters⁷ is not as refined as water from watercourses.

From 1895 until 1971, Missouri's courts held that groundwater was owned by the overlying property owner,⁸ at which time the comparative reasonable use rule was applied to all groundwater. This ruling effectively blurred the distinction between percolating groundwater and underground streams since water from either of these sources is not easily and readily distinguishable and both must be used in a reasonable manner.

As for surface water, Missouri case law has historically been focused on protection from diffused surface water and floodwater, rather than its beneficial use by the landowner. The comparative reasonable use rule was not applied to surface waters until 1993.⁹ Exactly what constitutes "reasonable use" is a question that case law addresses, the full extent of which has not, and probably cannot, be completely defined.¹⁰ The determination of reasonable use is based upon a variety of factors identified by the courts on a case-by-case basis, and commonly includes the use to which the water is put, the quantity of water used, the quantity of water available, the quality of the water when and if it is returned to the source, the needs of other riparians, and the current or prevailing climatic conditions.¹¹ Missouri courts have historically held that the determination of "reasonable use" is a court-decided, civil law matter.¹²

Missouri statutory law does not elaborate on what constitutes the different classes of water and the usage rights attached to them.¹³ Because much of northern and western Missouri's groundwater is mineralized, that part of the state generally relies on surface water supplies, while southern and eastern Missouri generally relies on groundwater supplies.¹⁴

Case Law - Watercourses (Steams and Rivers) Defined

The characteristics that define what constitutes watercourses and their acceptable uses is found in case law. In the legal sense, watercourses may be defined as federally navigable, navigable under state jurisdiction, or non-navigable, with each possessing special riparian considerations.¹⁵ As is apparent from the following cases, the courts in Missouri and other riparian states have set a distinction between "watercourses" and "surface water," which Missouri statutory law has not.

The courts provided a very straight forward announcement on the distinction between watercourses and surface water in the case of *Jones v. Hannovan*, 55 Mo. 462 (1874), by succinctly stating, "water which is not part of an artificial or natural watercourse or lake is diffused surface waters."

In the case of *Benson v. Chicago & Alton R.R. Co.*, 78 Mo. 504 (1883), the courts offered a definition as to what constitutes a watercourse. "There must be a stream usually flowing in a particular direction, though it need not flow continually. It must flow in a definite channel, having a bed, sides or banks, and usually discharge itself

into some other stream or body of water. It must be something more than a mere surface drainage over the entire face of a tract of land, occasioned by unusual freshets or other extraordinary causes. It does not include water flowing in the hollows or ravines in land, which is the mere surface water from rain or melting snow, and is discharged through them from a higher to a lower level, but which at other times are destitute of water. Such hollows or ravines are not in legal contemplation watercourses."

The case of *Dardenne Realty Co. v. Abeken*, 232 Mo. App. 945, 106 S.W.2d 966 (1937), further defined a "water course" as a stream or brook having a definite bed or channel for conveyance of water, which may include surface water, which loses character as such when it enters the channel, but water which ceases to remain in a channel and spread out over surface of low lands and runs in different directions without definite channel ceases to be "stream" or "water course," something more than a mere surface draining, swelled by freshets and melting snow being required to constitute a "branch" or "stream." Riparian rights may be acquired by prescription,¹⁶ notwithstanding that the watercourse is entirely artificial.

In *Dudley Special Road Dist. v. Harrison*, 517 S.W.2d 170 (Spr. Mo. App. 1974), the court distinguished watercourses from other types of surface waters, reiterating portions of the 1883 case of *Benson*, 78 Mo. 504. "A natural watercourse is characterized by a stream usually flowing in a particular direction, though it need not flow continually, having a definite channel, having a bed, sides or banks and usually discharging itself into some other stream or body of water. There must be something more than a mere surface discharge over the entire face of a tract of land, occasioned by unusual freshets, and not just limited to a hollow or ravine which is the sole result of mere surface water from rain or melting snow."

The court held in *Prichard v. Hink*, 574 S.W.2d 321 (1978), a watercourse must represent more than water from rain or melting snow, sloughs are not considered watercourses, and, in *Roberts v. Hocker*, 610 S.W.2d 321 (1980), a watercourse must consist of more than just a channel. Incidence of a channel for surface water, merely, does not establish a watercourse. Law of surface water deals with enjoyment and development of land and not the beneficial use of water, and so does not fall functionally within the rules of reasonable use of watercourses, subterranean streams and underground percolations.

Case Law - Surface Water Defined

Several Missouri cases have dealt with the definition of surface waters. *Keyton v. MKT Rail Road*, 224 S.W.2d 616 (1950), where the court defines surface water, is representative. The court held that the term, "surface water," refers to that form or class of water derived from falling rain or melting snow or which rises to the surface in springs and is diffused over the surface of the ground while it remains in that state or condition and has not entered a natural water course, and the

¹⁶ "A means of acquiring an easement in or on the land of another by continued regular use over a statutory period" -Gifis, p. 159.

¹⁷ Dewsnup and Jensen, p. 437.

term refers to such overflow and floodwaters that become severed from or leave the main current of the natural water course and spread out over the lower ground.

In *Keener v. Sharp*, 95 S.W.2d 648 (Mo. App. 1936), the court defined a lake as "an inland body of water of considerable size, occupying a natural basin or depression in the earth's surface below the ordinary drainage level of the region. Whether a sheet of water is to be classed as a lake, or marsh, swamp or bog, it is necessary to take into account the comparative depth or shallowness of the water, its permanence or liability to dry down and refill according to season, and the main source of supply, whether streams or springs or surface drainage."

This was expanded the following year in the case of *Keener v. Sharp*, 341 Mo. 1192, 111 S.W.2d 118 (1937), where the court further defined and identified characteristics of a lake, stream, and surface water. "Waters overflowing the banks of a river during a flood or freshet and spreading out over the bottom lands is 'surface water.' A 'water course' is a stream or brook having a definite channel for the conveyance of water which may include surface water which loses its character as such when it enters the channel, but water which ceases to remain in the channel and spreads out over surface lowland and runs in different directions without definite channel ceases to be a 'stream' or 'water course,' something more than a mere surface draining, swelled by freshets and melting snow, being required to constitute a 'branch' or 'stream.'"

The court wrote, in *Schifferdecker v. Willis*, 621 S.W.2d 65 (1981) "ditches constructed to drain surface water are not in and of themselves watercourses," and in the case of *Thomas v. Estate of Ducat*, 769 S.W.2d 819 (1989) it reaffirmed the distinctions noted in the previous cases of *Benson* (1883) and *Dudley* (1974). "A 'natural watercourse,'" wrote the court, "is a stream usually flowing in a particular direction, though it need not flow continually, in a definite channel having a bed, sides or banks and usually discharging itself into some other body of water. It must be something more than mere surface drainage and does not include water flowing in the hollows and ravines in the land which is mere surface water from rain or snow melt and is discharged through them from a higher to a lower level which are at times destitute of water."

Case Law - Riparian Rights in Watercourses

In Missouri, riparian rights in watercourses are incident to ownership of the land which the stream borders or crosses.¹⁷ While the courts have provided a fairly practical application for the definition of watercourses and surface waters, the boundaries of what constitutes riparian rights are not nearly as clear. A very early court decision that established the right of riparian landowner usage is found in the case of *Welton v. Martin*, 7 Mo. 309 (1841). In the decision, the court wrote, "the owner of the land is entitled use of a watercourse which flows across that land." The basis of this rule, having been

refined and clarified more recently by the state courts, is still followed today.¹⁸

Rights to Reasonable Use

The case of *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964), established the comparative reasonable use doctrine as applied to surface waterways. The right of a riparian owner in the water of a stream, in jurisdictions where the doctrine of riparian rights obtain, includes "the right to the flow of the stream in its natural course and in its natural condition in respect to both volume and purity, except as affected by reasonable use by other proprietors." The concept of reasonable use was upheld in the case of *Ripka v. Wansing*, 589 S.W.2d 333 (1970), in that reasonable use of water by riparians must include consideration of other riparians and applies to the reasonable use of natural stream flow.

Missouri does not have any governmental administrative procedure for conflict resolution between individual water users; rather, dispute resolution and enumeration of individual water use rights are left to the court system through use of the litigation process.¹⁹

Case Law - Groundwaters (Defined and Rights In)

While groundwater use issues have come before the Missouri courts, they have not done so to the extent of surface water issues. The concepts of underground streams as opposed to underground water (percolating water and water wells) and the doctrine of reasonable use serve to define and guide the acceptable uses of groundwater in Missouri. Groundwater is comprised of two distinct classes: Percolating groundwater and underground streams.²⁰ Missouri case law has generally followed the concept that the laws that apply to surface watercourses also apply to underground streams.²¹ Likewise, Missouri courts have held that the concepts governing the right to use percolating groundwater for water supply are similar to those of surface water.²²

Groundwater use and ownership have been addressed in different manners in various riparian states. Some cases which applied the concept of "ownership" of groundwater by the landowner was *Roath v. Driscoll*, 20 Conn. 533 (1850), in Connecticut; *Frazier v. Brown*, 12 Ohio St. 294 (1861), in Ohio; and *Behrens v. Scharringhausen*, 22 Ill. App. 2d 326, 161 N.E.2d 44 (1959), in Illinois. Other courts in different states, *DeBok v. Doak*, 188 Iowa 597, 176 N.W. 631 (1920), in Iowa; *Jones v. Oz-Ark-Val Poultry Co.*, 228 Ark. 76, 306 S.W.2d 111 (1957), in Arkansas; and *Finley v. Teeter Stone, Inc.*, 251 Md. 428, 248 A.2d 106 (1968), in Maryland, subscribed to the reasonable use rule of groundwater.

Missouri courts applied the same ownership doctrine earlier voiced in *Frazier* in the case of *Springfield Waterworks Co. v. Jenkins*, 62 Mo. App. 74 (1895), holding in favor of absolute riparian ownership of percolating groundwater. The court held that, "percolating groundwater is regarded as a part of the soil to which an adjoining

¹⁸ *Bolinger v. Henry*, 375 S.W.2d 161 (1964), and *Ripka v. Wansing*, 589 S.W.2d 333 (1970).

¹⁹ Dewsnap & Jensen, p. 440.

²⁰ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 458.

²¹ Dewsnap & Jensen, p. 437.

²² *Higday v. Nickolaus*, 469 S.W.2d 859 (1971).

²³ *Springfield Water Works Co. v. Jenkins*, 62 Mo. 74 (1895).

proprietor has no absolute or natural right. It belongs to the owner of the land, and its diversion and appropriation by him for the improvement or benefit of his estate can not be made the basis for complaint against him by anyone, however grievous the injury may be." This decision, that groundwater was property to be owned, was later overturned in the case of *Higday*.

Arkansas made important distinctions in groundwater use in *Jones v. Oz-Ark-Val Poultry Co.*, 228 Ark. 76, 306 S.W.2d 111 (1957). The reasoning that the Arkansas court used is significant to Missouri law because the court discussed porous underground structure, karst formations, which are also found in Missouri.

"The reasonable use rule of use of groundwater allows landowner to use water with regard to his neighbors needs, while "eastern correlative rights rule" allows landowner use of percolating groundwater when beneficial to the overlying estate. The reasonable use rule applies to water rights of riparian owners and to true subterranean stream or to subterranean percolating waters. Where two or more persons own different tracts of land, which are under laid by porous material extending to and communicating with them all, and which are saturated with water moving with more or less freedom therein, each person has common and correlative right to use of water on his land, to the full extent of his needs, if common supply is sufficient, and to extent of reasonable share thereof if supply is so scant that use by one will affect supply of others."

In a precedent setting case concerning percolating groundwater in this state, *Higday v. Nickolaus*, 469 S.W.2d 859 (K.C. Ct. App. 1971), Missouri adopted the comparative reasonable use doctrine for groundwater. In doing so, the court rejected the absolute ownership rule of percolating groundwater²³ in favor of the comparative reasonable use rule. The Kansas City Appeals Court held that, "an underground stream is defined as water that passes through or under the surface in a definite channel, or one that is reasonably ascertainable. Percolating waters include all waters which pass through the ground beneath the surface of the earth without a definite channel and not shown to be supplied by a definite flowing stream. Percolating waters are those which ooze, seep, filter and otherwise circulate through the interstices of the subsurface strata without a definable channel, or in a course that is not discoverable from surface indications without excavation for that purpose. All underground waters are presumed to be percolating and therefore the burden of proof is on the party claiming that a subterranean stream exists. The rule of reasonable use should apply to subterranean percolating waters. It is that legal standard, in absence of a statutory expression, which existing water resources may be allocated most equitably and beneficially among competing users, private and public. The application of such a uniform legal standard would also give recognition to the established interrelationship between surface and groundwater and would, therefore, bring into one classification all waters over the use of which controversy may arise. Under the rule of reasonable use as stated, the fun-

damental measure of the overlying owner's right to use the groundwater is whether it is for purposes incident to the beneficial enjoyment of the land from which it is taken."

²⁴ DuCharme and Miller, pages 8-11.

²⁵ Vandike, *Surface Water Resources of Missouri*, pp. 1-2.

DRINKING WATER SUPPLIES

The Missouri River, by itself, is the surface water supply for slightly less than half of the publicly-supplied population of Missouri, including those places that have alternate water supplies, such as St. Louis County.²⁴ Northern and western parts of Missouri generally rely on surface waters for public drinking water supplies, as well. By contrast, much of the Ozarks region of Missouri relies on groundwater supplies for public drinking water.²⁵

Statutory Law - Water Supplies and Wells

The purposes of statutory law, addressing water supplies and wells, typically include enabling legislation for the formation of public districts to supply water, and the setting up of governmental agencies to help safeguard the quality of water supplies. Major statutes in this topic area include Chapter 247, RSMo, on Public Water Supply Districts; Chapter 256, RSMo, on Geology, Water Resources, and Geodetic Survey; Chapters 386 and 393, on utilities and the Public Service Commission, and Chapter 640, RSMo, on Water Resources, all dealing with public drinking water supply systems in one way or another. There are other statutes also dealing with public drinking water supply, and these are mentioned, below.

Chapter 247, RSMo, mostly concerns forming and operating Public Water Supply Districts, both county (sections .010 to .227) incorporated in the circuit courts, and metropolitan (sections .230 to .670), with the differences being the nature of the political subdivision of government, and the size or scale of the operation. These sections include coverage of rules governing construction, sale and distribution of water, fixing of water rates, issuance of bonds, rights and powers of districts, boundaries, and other administrative details.

Chapter 256, RSMo, includes Sections 256.200 to 256.260, giving certain duties and powers to the Clean Water Commission, DNR. The CWC was created in 1961, and part of this law dates from the reorganization of state government in 1974. The Missouri Water Resources Board went out of existence and was replaced with the Clean Water Commission by this legislation. The staff of the CWC comprises the Water Pollution Control Program, DEQ.

Information-sharing, Contamination Prevention and Coordination

The Missouri Water Quality Coordinating Committee (WQCC) meets monthly, and is organized under the aegis of the Water Pollution Control Program, DEQ, DNR. This group shares information related to water quality among state and federal agency officials and

other special interest groups. The state departments of Agriculture, Health, Conservation, and Natural Resources, Lincoln University and the University of Missouri, Extension Service, and the federal departments of Agriculture, and Interior, and the Environmental Protection Agency are among those agencies regularly represented at these meetings. In addition, farmer-producer groups, such as the Missouri Ag. Industries Council, the Missouri Farm Bureau, and the Missouri Corn Growers Association, as well as agricultural chemical manufacturers also attend WQCC meetings regularly. This group works behind the scenes in a cooperative manner to share information, and avoid duplication of efforts in helping to prevent contamination of public drinking water supplies.

Sections 256.280 to 256.360, RSMo, create the "Missouri Water Development Fund," and set forth the powers of the CWC relative to the fund and its purposes. Notably, section 256.360 directs that the CWC is to protect the public interest in federal reservoirs. This part dates from 1969, and was adopted in part to allow the state to enter into an agreement with the U.S. Army, Corps of Engineers, for the purchase of water storage in the reservoir behind Clarence Cannon Dam, which is now called Mark Twain Lake. This will be discussed further in regard to the Clarence Cannon Wholesale Water Commission (CCWWC), below (Sections 393.700, *et seq.*, RSMo.)

Sections 256.400 to 256.430, RSMo, establish the major water users registration program of the DNR. Through this program, water use data are compiled for the purpose of analysis and planning for future water management needs. The Multipurpose Water Resource Act, Sections 256.435 through 256.445, RSMo, establishes a multipurpose water resources program in the DNR for the purpose of helping with long term water storage projects in the state, and has provisions for issuing bonds and levying taxes.

The Missouri Water Well Drillers' Act was enacted into law in 1985 as Sections 256.600 through 256.640, RSMo, for the purpose of assuring that water wells are properly constructed and produce safe supplies of water. Drillers, drilling rigs, and pump installers must be registered with DNR.

Sections 256.641 through 256.660, RSMo, establish the Southeast Missouri Regional Water District as a public corporation in the "Bootheel" region of the state. Safeguarding the quality and quantity of groundwater is the purpose of the district in this agricultural irrigation area of Missouri.

Chapter 640, RSMo, creates the Department of Natural Resources (DNR), and the duties of the DNR in regard to state water planning and public drinking water are spelled out in the chapter. In particular, the Safe Drinking Water Commission was formed by Section 640.100 *et seq.* The Safe Drinking Water Fund was established by Section 640.110. The administrator is the Public Drinking Water Program, DEQ. Testing of tap water for various contaminants was set out by Section 640.120. Within this chapter, Sections 640.600 to 640.620 cover grants in aid for drinking water supply and sewer systems.

In addition, Sections 640.400 to 640.435, RSMo, are called the Missouri Water Resource Law. In particular, Section 640.415 calls for the development of a State Water Plan for a long-range, comprehensive statewide program for the use of surface water and groundwater resources of Missouri.

Despite provisions in the law for developing water supplies and granting funds for the development and improvement of water supplies, it also was necessary to pass other enabling statutes allowing for local governments to enter into agreements and to provide for the formation of quasi-governmental entities. Sections 386.025 (in the Public Service Commission Law) and Sections 393.700 through 393.770, RSMo, called the Joint Municipal Utility Commission Act, were enacted to allow the state and several part-county public water supply districts and several cities in northern Missouri to enter into a collaborative agreement to set up the Clarence Cannon Wholesale Water Commission (CCWWC) to use water stored in Mark Twain Lake.

Mark Twain Lake is the impoundment behind Clarence Cannon Dam on the Salt River in northeastern Missouri. In 1969, the Missouri Water Resources Board requested that the Corps of Engineers build 20,000 acre-feet (AF) of storage into its plans for Clarence Cannon Dam for the purpose of assuring rural northeastern Missouri a nearly "drought-proof" supply of drinking water. The northern part of Missouri, generally, does not have adequate supplies of potable groundwater, and a surface water impoundment was seen as the best option for assuring the economic viability of the region.²⁶ (See Figure 12, the C.C.W.W.C.)

Chapter 393, RSMo, provides additional language relative to the Public Service Commission, and relative to utility companies, including the power of the commission to ascertain the valuation of property of such companies. This chapter deals generally with gas, electric, water, heating, and sewer companies (utilities), and contains a section, 393.130.5, which specifically addresses provision of fire hydrants and water distribution pipes, and how to determine charges for water in order to pay for them. Sections 393.010 through 393.030 describe the powers of water and sewer companies. Purposes of Chapter 393 include water testing.²⁷

Section 393.140, RSMo, gives the PSC certain governing powers, including "general supervision," ascertaining quality of service, and power to fix standards for utilities. The de-commissioning of nuclear power plants (that use water both for steam and cooling) is provided for in Section 393.292. While most of this chapter became law early in the century, this last section was enacted in 1989.

The Joint Municipal Utility Commission Act, Sections 393.700 through 393.770, RSMo, is the enabling legislation for the future formation of cooperative companies to provide utilities in the manner of the Clarence Cannon Wholesale Water Commission. This was enacted in 1978.

²⁶ Vandike, *Surface Water Resources of Missouri*, p. 1.

²⁷ See also Water Testing, in the Water Quality section.

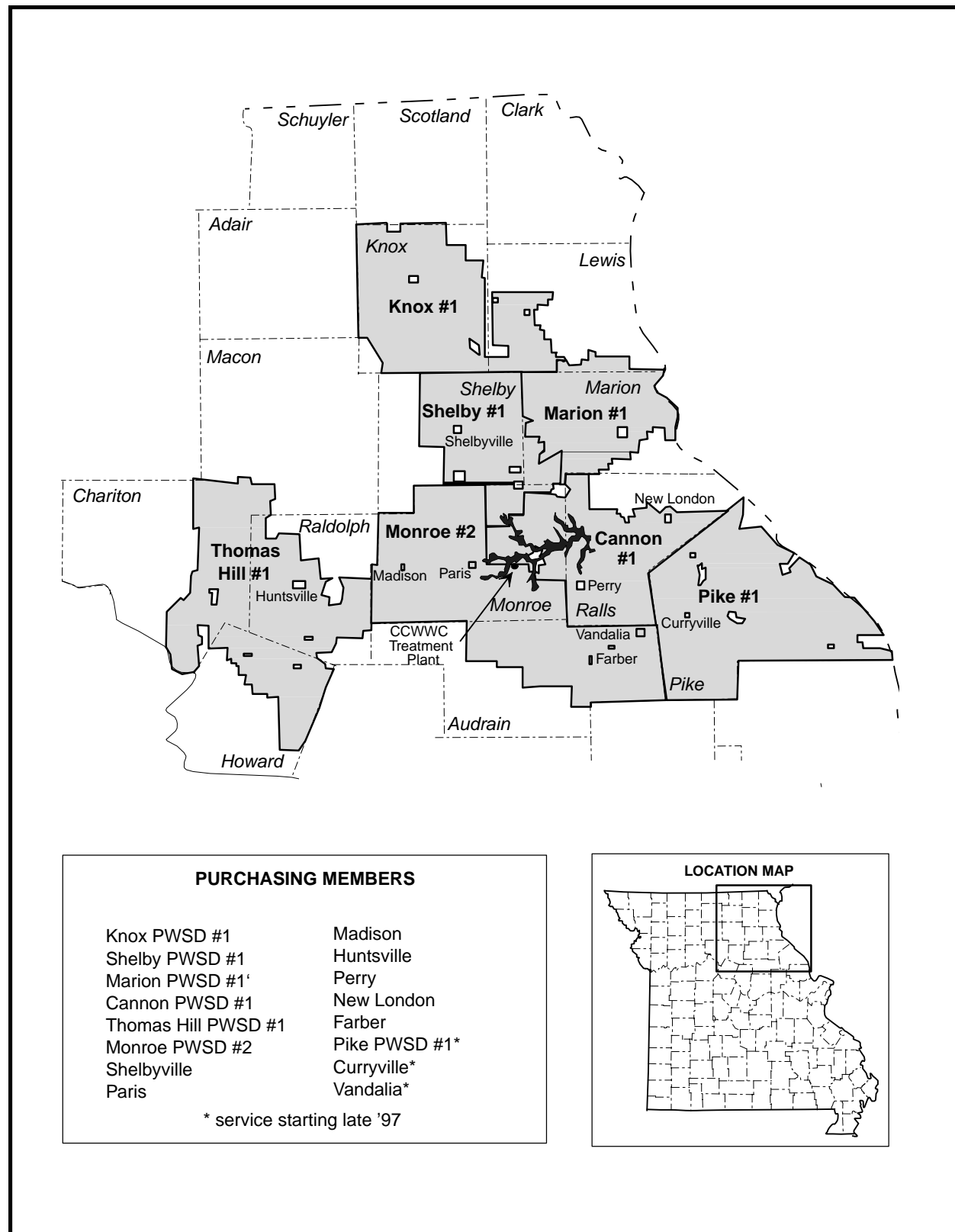


Figure 12. Map showing the territory served by the Clarence Cannon Wholesale Water Commission (CCWWC). Source: CCWWC

Statutory Law – Drinking Water Supply Contaminants

While water contaminants are discussed in the chapter on Water Quality in detail, it is pertinent to discuss some, here, as they apply to drinking water supply. Maximum contaminant levels (MCLs) in drinking water supplies are established by the Safe Drinking Water Commission of the DNR (also by the U.S. Environmental Protection Agency [EPA]), reference Sections 640.100 through 640.140, RSMo.²⁸ These sections were enacted to comply with federal requirements for maintaining the primacy of state enforcement of the federal Safe Drinking Water Act [42 USC 300]. MCLs are of concern because of the effects of toxic substances on both the human environment and the natural environment.

The use and registration of pesticides and other agricultural chemicals are discussed in Chapter 281, RSMo. The Missouri Department of Agriculture is developing a *Pesticide and Water Quality Generic State Management Plan* for the control of pesticides. The focus of this effort is to help local water suppliers meet or exceed standards for MCLs in drinking water. The plan being developed will focus on specific kinds of pesticides, and agricultural best management practices (BMPs).²⁹

Case Law – Drinking Water Quality

Dependant upon the supply source, the drinking water supplier, and the contaminant, individuals whose drinking water becomes contaminated may seek relief indirectly through a governmental entity whose power is provided by statutory laws or directly through a civil action in a court of law. With regard to drinking water supply, riparian landowners have the right of expectation of water in watercourses that are undiminished in quality. This right was voiced by the court in the case of *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964). The court acknowledged the right of a riparian owner to the water of a stream. The riparian owner has "the right to the flow of the stream in its natural course and in its natural condition in respect to both volume and purity, except as affected by reasonable use by other proprietors."

With regard to groundwater supply, the courts have not enumerated any riparian landowners' "right of expectation" to quality of groundwater to the extent that they have with expectations to the quality of water in watercourses. The riparian right to expect groundwater, which is undiminished in quality, may be a topic which will come before the courts in the future. Riparian landowners, whose groundwater becomes contaminated, may seek civil law relief against polluters under tort law that provides for damages after the injury has occurred.

Other Statutes

Article IV of the Missouri Constitution establishes the "Executive Department" of state government [the executive branch of Missouri government], and Section 12, which provides for the composition of

²⁸ Case law dealing with contaminants is found in the section on Water Quality.

²⁹ Andre, Paul, Program Coordinator, Bureau of Pesticide Control, M.D.A., conversation, 15 April, 1998. At the time of this writing, the *Plan* is not a final, published document.

³⁰ Please refer to the *State Water Resources Law Annual Report, 1998*, for additional information on water user registration.

³¹ For example, the mineral springs located at Excelsior Springs, Mo.

the "Executive Department," names the State Treasurer as one of the officers. Pursuant to Section 12 of Article IV, Chapter 30, RSMo, sets up the office of the State Treasurer. Loans to public drinking water systems are discussed in Sections 30.750 to 30.767, RSMo, in the part of the State Treasurer law dealing with linked deposits, farm assistance, small business and water system loans. Water supply systems eligible to receive loans are defined in Subsection 30.750 (13), noting size (serving less than 50,000 persons) and certification by the DNR that the system has suffered a significant decrease in its capacity to meet its service needs as a result of drought. This law was passed in 1986, a drought year, and has been amended several times since. Loan interest rates are to be set by rules.

Sections 70.370 to 70.441, RSMo, enact a compact between Missouri and Illinois for the area around St. Louis, and establish what is called the Bi-State Development District. Among other things, this facilitates cooperation in regard to bridges, water supply, sewage disposal, wharves, docks, harbors, commodity storage for barge shipment, and other water-related matters, which are addressed in Article III on the powers of the district.

Title VII, RSMo, on Cities, Towns, and Villages, contains 23 chapters of provisions empowering local governments. Chapter 71 includes provisions relative to all cities and towns, including Section 71.287, which deals with water usage, and the voluntary water use reports made to DNR's Division of Geology and Land Survey. These reports, and those of other major water users, are received by the Water Resources Program, and an annual Water Use Report is prepared. The data are used in preparation of the *State Water Resources Plan* and other documents.³⁰

Sections 71.530 and 71.540, RSMo, under the heading of public utilities, covers municipal water supply contracts, and 71.550 covers voter approvals. Section 71.700 authorizes cities to regulate, tax, and license public water supply sources. Section 71.710, RSMo, authorizes cities to protect all springs, wells, or other water supply sources from the danger of contamination. These are administrative operating provisions of law, having more to do with contractual and other details than with actual water supply and other utilities. Provisions of Sections 71.530, 71.540, and 71.550 antedate the codification of laws of 1919. Sections 71.700 and 71.710 pre-date the codification of 1909.

More germane to water supply, however, are Sections 77.140 and 77.150, RSMo, which govern how third class cities may control watercourses, establish water reservoirs, acquire property for dams and even for therapeutic bathhouses and mineral water vending houses for the operation of mineral springs³¹ and wells. In Missouri, the General Assembly legislates for classes of cities and counties, based on assessed valuations, which generally relates to city or county size.

In Section 77.490, RSMo, the statute grants to third class cities the right to fix water price and quality for any firm providing water under a franchise granted by the city, and in Section 77.530, other powers of a city council are granted, including purchase or condemnation of land for waterworks and sewers.

Public works are governed by Chapter 88, RSMo, including Section 88.633, water supplies for third class cities, and 88.773, water supplies (contracts) for fourth class cities.

Municipally owned utilities are covered by Chapter 91 of the statutes, including waterworks. These are administrative operating provisions, especially Section 91.010, cities empowered to erect waterworks; Section 91.050, cities owning waterworks may supply other cities; Section 91.060, municipalities may procure water from other cities; Section 91.070, city authorized to lay water mains; Section 91.090, certain cities may construct or acquire waterworks; Section 91.100, city may contract to supply water; Section 91.110, every such city may purchase waterworks; Section 91.120, city may acquire a water system; Section 91.250, on waterworks bonds; Section 91.260, on having a board of waterworks commissioners; Section 91.270, on the powers of the board; Section 91.290, on the waterworks being made exempt from seizure; Section 91.593, on acquisition of property outside the city limits; Section 91.595, on revenue bonds for waterworks, and Section 91.600, on how to acquire property for a city waterworks.

Title XV of the Statutes, dealing mostly with swamplands, drainage, and levees, also addresses the topics of public water supply districts, sewer districts, and waterworks. Chapter 247, RSMo, mentioned above, contains provisions for forming county or metropolitan water supply districts. Like many of the provisions discussed above, these are the administrative and operating provisions related to such matters as written agreements, condemnation of property, procedures to follow, how to dissolve a district once it has been formed, powers of board members, the setting of rates, and the collection of fees. Similarly, Chapter 250, RSMo, which deals both with sewerage and water systems, city or district, contains the administrative operating provisions for construction, connection, providing service, issuing bonds, record keeping, dissolution, and disconnection of customer service.

In Title XVI, RSMo, covering conservation, resources, and development, are found Chapter 256, on Geology, Water Resources, and the Geodetic Survey; Chapter 257, on Water Conservancy Districts, and Chapter 260, dealing with Environmental Control. Chapter 256 includes duties of the Clean Water Commission, mentioned above. All sections of Chapter 256 address water supply in some way. Aspects of these statutes deal with quantity of supply, including planning ahead, while other aspects deal with quality of supply, such as the permitting of well-drillers, and the registration and certification of wells and pumps to assure that construction and installation have been done correctly.

Chapter 260, RSMo, was enacted to establish the State Environmental Improvement and Energy Resources Authority, to provide for the conservation of air, land, and water resources of Missouri, notably to abate water pollution. Section 260.095, specifically deals with providing drinking water treatment facilities and preventing or reducing pollution.

³² DuCharme and Miller, *Water Use of Missouri*, pp. 15-21.

³³ Refer to DuCharme and Miller, *Water Use of Missouri*, for more specific usage information.

³⁴ *City of Cape Girardeau v. Hunze* (1926), "Municipalities may be considered a riparian proprietor."

³⁵ DuCharme and Miller, *Water Use in Missouri*, p. 8

³⁶ The Division of Geology and Land Survey, with the approval of the Well Installation Board, is responsible for the implementation of the Water Well Drillers' Act. See also the *Missouri Water Resource Law 1998 Annual Report*.

³⁷ See also *Final Report of the Rural Water Systems Project*, a State Water Plan component undertaken in conjunction with the Missouri Department of Economic Development in 1995.

³⁸ See *Higday v. Nickolaus*, 469 S.W.2d 859 (1971), and *Jones v. Ozark-Val Poultry Co.*, 306 S.W.2d 111 (1957).

INDUSTRIAL WATER SUPPLY

Missouri industries are typically supplied with water from either a public water supply system or self-supplied wells, streams or surface water sources.³² As a category of water consumers, they typically use, per capita, much larger quantities of water than do private individuals.³³

Case Law

No special distinctions have been made by Missouri courts with respect to municipal, industrial and corporate water users. Water for industrial water supply and use is treated by the courts as a riparian right, with the standard caveats of reasonable use and non-injury to another. They are regarded as holding the same rights, privileges and restrictions as an individual, and as such, the previously stated cases³⁴ appear to be applicable with regard to water supplies.

PRIVATE WELLS, WELL DRILLERS

Privately owned wells are a major source of water supplies for rural Missourians. The most common sources of self-supplied water for residential, commercial, and industrial uses in Missouri are groundwater wells.³⁵

Statutory Law

Sections 256.600 to 256.640, RSMo, are known as "The Water Well Drillers' Act," and covers permitting of drillers and other regulations by DNR to assure proper well construction.

The Water Well Drillers' Act was passed in 1985. By the fall of 1987, rules were in place governing the construction of domestic water wells, pump installations, and the plugging of abandoned wells. Drilling contractors and pump installation contractors are required to have permits, and their rigs are required to be registered.

This law was passed to ensure that the quality of Missouri's groundwater is maintained at the highest level practical to support present and future water use. If wells are not constructed properly, they may allow surface water, with its contaminant load, to bypass the earth's natural filtering system and enter directly into drinking water aquifers.

An important amendment to this law was passed in 1991. The amendment brought the heat pump, monitoring well, and mineral test hole drilling industries under regulation. It also created the Well Installation Board.³⁶ Chapter 256, RSMo, also deals with multipurpose water supply and storage projects, mentioned above and below.³⁷

Case Law

Private water wells are recognized as a legitimate right of a landowner, so long as his use of the water does not injure another.³⁸

WATER STORAGE³⁹

Water is stored for many purposes, including a dependable water supply for day-to-day use as well as a reserve in time of drought, and to lessen the severity of flood stages downstream. Water is stored in private and public facilities and in small and large quantities. Water that is stored permanently is said to be retained.⁴⁰ Often, stored water has multiple purposes, such as for recreation, drinking water supply, flood prevention and reduction, low flow augmentation, fish and wildlife habitat enhancement, and hydroelectric power generation.

Statutory Law – Water Supply and Storage

Sections 256.435 through 256.445, RSMo, establish the Multipurpose Water Resources Program, Water Supply and Storage Projects. This law sets up mechanisms for administration, rule-making, planning, grants, bonds and voter approval of programs to ensure public water supply storage. Most water supply storage is in reservoirs.

Case Law

Under case law, water storage is a recognized and accepted water use, so long as it is done in a reasonable manner and does not infringe upon the rights of other riparians. The courts and the legislature have not made any special distinction between the "industrial company riparian landowner," a "municipal riparian landowner," and the "individual person riparian landowner," with regard to the right to store and use water, historically, all being treated the same in the eyes of the courts.⁴¹ A riparian owner is not limited solely to private individuals as illustrated in the case of *City of Canton v. Shock*, 66 Ohio St. 19, 63 N.E. 600 (1902), where the Ohio court held that municipalities are considered riparian owners for the purpose of public water supply.

"Municipalities may be considered a riparian proprietor," wrote the court in the case of *City of Cape Girardeau v. Hunze*, 314 Mo. 438 (1926). In *City of Hamilton v. PWS No. 2 of Caldwell County*, 849 S.W.2d 96 (1993), the court held that "proper water supply is a commodity most essential to health and welfare of population and so engages paramount police power of the state. The terms of RSMo. 250.120, 1, are mandatory and not merely directory."

While Missouri statutes address public and municipal utilities as water suppliers, the courts, however, have not discussed whether an individual customer who purchases and uses water from a municipal water utility is legally considered a riparian.⁴²

Statutory Law – Bottled Water and Soft Drinks

Water supply, as a topic, must also include bottled water, whether in bottles or cans. As a packaged water supply, consumers need to be aware of product safeguards, that they receive a sanitary, wholesome commodity. Spring water, well water, or mineral water, the buyers want to be certain that the beverage they drink is potable.

³⁹ See also the section on Protection From Water, Water Detention and Retention.

⁴⁰ Detention and retention are discussed in the section on Protection From Water.

⁴¹ "Person" is defined by RSMo. §281.020 (16); §281.220 (27); §292.600 (5); et al. §644.016(5) defines a "person" as including "political subdivisions, any agency, board, department or bureau of the state or federal governments."

⁴² Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 462.

⁴³ For more information on the causes and effects of drought refer to: Drew and Chen, *Hydrologic Extremes in Missouri: Flood and Drought*, Water Resources Report Number 49, 1997.

⁴⁴ Drew and Chen, *Hydrologic Extremes in Missouri: Flood and Drought*, p. 39.

⁴⁵ Refer to the *Missouri Drought Response Plan*, 1995, a State Water Plan component, Water Resources Report Number 44, for further information.

⁴⁶ "Natural" or "Act of God" as opposed to human induced lack of supply or overuse by another. Acts of God do not provide legal standing for bringing suit, unlike human induced impacts that affect both supply and riparian use, and are grievable in a court of law.

⁴⁷ Miller and Hays, *Missouri Drought Response Plan*, pp. 23-24.

Domestic and imported bottled water and soft drinks are cited in Section 192.100, RSMo, which gives the duties of the Missouri Department of Health (DOH), including the inspection of beverages by the Bureau of Food and Drug Inspection. In addition, Sections 196.365 through 196.445, RSMo, comprise a section entitled "Manufacture of Soft Drinks and Beverages."

In Section 196.365, carbonated beverages, mineral waters, and "all other waters" are included in the definition of what are called "soft drinks." Sanitary requirements are set by DOH regulations, pursuant to Section 196.420, RSMo, to assure wholesome products.

DROUGHT⁴³

Obviously, drought can and does impact water supplies, sometimes severely. Sometimes it significantly affects the economy, the environment, and the society of the state.⁴⁴ While this is not a specifically defined topic in Missouri statutes, the subject of drought is implied in the wording of the Missouri Water Resource Law in dealing with "conservation, development and appropriate use.." In Section 640.400.2, the law says, "The department [of Natural Resources] shall ensure that the quality and quantity of the water resources of the state are maintained at the highest level practicable to support present and future beneficial uses. The department shall inventory, monitor and protect the available water resources..." This inventory is discussed in Section 640.412, RSMo.⁴⁵

In addition, Chapter 644, RSMo, addresses water pollution, permits borrowing on the credit of the state for rural water and sewer grants, urban drinking water, and emergency drought relief. Money spent for emergency drought relief shall be expended for connection of public water systems and "any other purpose directly related to the provision of water to public water systems under drought."

Drought is a lack of natural water,⁴⁶ usually defined as a lack of rainfall. There are three basic recognized "categories" of drought, namely (1) agricultural drought, (2) hydrological drought, and (3) meteorological drought. Drought is a "slow-onset disaster." Unlike storms or earthquakes, which happen quickly, drought is a problem that develops over time, becoming more severe with the passage of time, until there is relief. For drought planning purposes, there are six climatic regions of Missouri. These have, within the regions, characteristics that make them useful for research, planning and response purposes. In addition to the six climatic regions, there are three "drought susceptibility regions" based on the availability of groundwater resources.

According to the *Missouri Drought Response Plan*, there are three drought response priority classifications of water use, namely, 1) Essential: domestic, health care, and public use (such as firefighting); 2) Important: agricultural, restaurant, etc., and 3) Non-essential: lawn and garden watering, golf course watering, fountains, swimming pools, carwashes.⁴⁷

No specific cases were identified specifically pertaining to water supply under drought conditions. As stated earlier in this chapter, the riparian landowner "has the right to the flow of the stream in its natural course and in its natural condition in respect to both volume and purity, except as affected by reasonable use by other proprietors."⁴⁸ "The concept of reasonable use of water by riparians must include consideration of other riparians and applies to the reasonable use of natural stream flow."⁴⁹ As the reasonable use rule applies to watercourses, it also applies to surface water⁵⁰ and to groundwater.⁵¹ Drought, being a natural occurrence, directly affects the "natural" water supply levels and therefore the riparian's "reasonable use" with respect to water quantities. During drought conditions water levels decrease while water needed for use remains constant or may even increase, dependant upon conservation measures. Reasonable use, as it applies to the quantities of water supplies used, may be a topic that comes before the courts sometime in the future.

⁴⁸ *Bollinger v. Henry*, 375 S.W.2d 161 (Mo. 1964).

⁴⁹ *Ripka v. Wansing*, 589 S.W.2d 333 (1970).

⁵⁰ *Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n.*, 859 S.W.2d 681 (1993), and *Campbell v. Anderson*, 866 S.W.2d 139 (1993).

⁵¹ *Higday v. Nickolaus*, 469 S.W.2d 859 (1971).

WATER USE

Missouri's watercourses, surface waters and groundwaters are put to a variety of uses. Some of the larger consumptive water uses include thermal electrical generation, municipal, industrial, and agricultural uses. Non-consumptive uses include recreation, commercial navigation, and hydroelectric power generation.¹ The riparian's right to water use is set out in several cases. The landowner is entitled to use a watercourse that flows across his land.² This right includes the right to the flow of the stream in its natural course and in its natural condition in respect to both volume and purity, except as affected by the reasonable use of other proprietors.³ The rule of reasonable use also applies to groundwaters.⁴ The riparian's right to use surface waters is less clearly defined than water from watercourses and groundwater, but it, too, is subject to the comparative reasonable use rule.⁵

DRINKING WATER USE

Drinking water⁶ is arguably the fundamental use of water, superceding all other uses. The use of water for human consumption is so fundamental and obvious that no statute or case is necessary to legally validate it. The use of water for human consumption is affected by several factors: The amount of water available, the quality of the water available, the amount of water needed, and the quality of the water needed. Both statutory law and case law recognize the importance of these factors. Because the use of water for human consumption is so dependant upon quantities and quality of supply, most statutory and case law dealing with this topic is oriented towards addressing and ensuring the needed quality and quantities. The use of water for human consumption cannot easily be separated, in the legal context, from water quantity and quality of water supply. Many statutes, and most cases cited in these chapters, also apply to drinking water use.

¹ DuCharme and Miller, *Water Use of Missouri*, pp. 1-3.

² *Welton v. Martin*, 7 Mo. 309 (1841).

³ *Bollinger v. Henry*, 375 S.W.2d 161 (1964).

⁴ *Higday v. Nickolaus*, 469 S.W.2d 859 (1971). For a more detailed discussion on a riparian's right to use water, please refer to the section on Water Rights..

⁵ *Campbell v. Anderson*, 866 S.W.2d 139 (Mo. Ct. App. 1993) applied the reasonable use rule to protection from floodwaters and *Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n.*, 859 S.W.2d 681 (Mo. 1993) applied the reasonable use rule to protection from drainage waters. Both cases were focused on protection from water, however, the "reasonable use rule" also encompasses the expectations accompanying beneficial use of water.

⁶ Sometimes referred to as domestic water use in case and statutory law.

⁷ Webster's New World Dictionary.

Laws

Chapters 247, 256, and 640, RSMo, are major portions of Missouri law dealing with public drinking water systems. In this book, the chapters on Water Supply and Water Quality provide details on the statutes dealing with this topic.

Water supply used for human consumption is fundamental to case law actions and as such, comes under the doctrine of reasonable use. Case laws addressing the reasonable use rule, for use as drinking water, pertaining to water quality, are cited in the section on Water Quality. Case laws addressing the reasonable use rule, for drinking water with reference to water supplies, are fully discussed in the section on Water Supply.

CONSERVATION

Conservation is "the act or practice of conserving; protection from loss or waste. The official care, protection, or management of natural resources."⁷ The following water-related statutory laws are aimed at the protection of our state's topsoil resources from wind and water-borne loss, and the protection and management of Missouri's aquatic and water-dependent natural communities.

Statutory Law – Title XVI

Conservation, natural resources, and development are dealt with in Title XVI of the Statutes, Chapters 251 through 260. The conservation of water and other natural resources is the charge of two departments of state government. The Missouri Department of Conservation (MDC) has authority to regulate fish and game, established by Chapter 252, RSMo. Forestry is covered in Chapter 254. Forestry, fish, and wildlife (game and non-game) are the areas of primary interest to the MDC. In the view of the MDC, water is aquatic habitat, and a commodity essential for forests, fish, and wildlife. The MDC is under the management of the Conservation Commission, which appoints a director. In this way, the MDC is constitutionally different and separate from other executive departments of the State of Missouri. This was provided for in 1936, when the people approved Article XIV, Section 16, in amendment to the 1875 Constitution of Missouri. The 1945 constitution, under which Missouri government now operates, kept these provisions as Article IV, Section 40 *et seq.*

Also in Title XVI, RSMo, are chapters on the Missouri Department of Natural Resources (DNR). Geology, water resources, and land surveying (DNR) are addressed in Chapter 256 (and Chapter 640). State parks and historic preservation (DNR) are provided for in Chapter 253. Outdoor recreation, and oil and gas production (DNR), are covered by Chapters 258 and 259, respectively. Chapter 257, RSMo, authorizes the formation of Water Conservancy Districts in watersheds or basins of rivers of Missouri, for various engineering purposes, in-

cluding water detention. All of these areas are related to or involve the use of water resources.⁸

Chapter 278, RSMo, under a separate title of law (Title XVII, Agriculture and Animals), provides the mechanism to set up Soil and Water Conservation Districts, and authorizes the establishment of Watershed Protection and Flood Prevention subdistricts. Sections 278.060 through 278.155, RSMo, are called "The Soil and Water Conservation Districts Law." These statutes were enacted in 1943, and have since been amended. Districts are congruent with counties. All 114 counties of Missouri are now organized as Soil and Water Conservation Districts. Sections 278.160 through 278.300, RSMo, authorize the formation of subdistricts of Soil and Water Conservation Districts, for the purposes of undertaking watershed protection and flood prevention projects. The Soil and Water Conservation Program, DNR, is mandated to help landowners and tenants abate soil erosion on agricultural lands in Missouri. Conserving water and soil high in the watersheds is the present method of achieving this goal. The Soil and Water Conservation Program, in the Division of Environmental Quality, DNR, works closely with the Soil and Water Conservation Districts and the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), in Missouri. The purposes of the districts, of course, are the conservation of soil and water, and the prevention of erosion by wind and water. Chapters 253, 256, 257, 258, 259, parts of 278, and 640 are administered by the DNR.

State and federal cooperation, needed to receive and accept federal funds for soil conservation, is authorized by Sections 278.010 through 278.050, RSMo, in which Missouri accepted the provisions and requirements of "The Soil Conservation and Domestic Allotment Act" of 1936 (16 U.S.C.A. Section 590). The Curators of the University of Missouri were designated the agency of the state of Missouri to administer plans that must be approved by the U.S. Secretary of Agriculture. They act through the Cooperative Extension Service. These sections were enacted in 1939, during the Great Depression, and the long, severe drought of that decade.

Using Plants for Erosion Control and Soil Conservation

Section 252.300 *et seq.*, RSMo, is known as "The Missouri Economic Diversification and Afforestation Act of 1990." A goal of the law is to develop "a long-term, integrated strategy that will result in soil conservation, improved water and air quality, enhanced wildlife habitat, increased job opportunities, and reduced social problems, to the benefit of all citizens of the state of Missouri."

An "agroforestry" program is mandated by Section 252.303, wherein the University of Missouri College of Agriculture, the Extension Service, the DNR, the Missouri Department of Agriculture, the USDA, and private industry councils cooperate with the MDC, to encourage soil conservation and diversification of the state's agricultural base, using tree crops.

⁸ See also *Water Use of Missouri*, State Water Plan Volume IV, Water Resources Report Number 48, for more discussion on this topic.

⁹ *Agroforestry Notes*,
USDA National
Agroforestry Center,
Lincoln, Neb., August,
1996, p. 3.

¹⁰ Calvert, Paul, MDC,
Jefferson City, Mo.,
personal conversation, 17
April, 1998.

Buffer Strips

Windbreaks and riparian buffer strips are most commonly associated with what are termed agroforestry practices. The Great Plains Drought of the 1930s spurred the planting of windbreaks to stem the loss of topsoil, and to minimize the problem of sedimentation of water supply reservoirs and rivers, has spurred a more recent planting of riparian buffer strips to accomplish several related water and soil conservation goals. Buffer strips filter sediment in stormwater runoff (drainage water), take up nutrients found suspended or dissolved in diffused surface water, and stabilize stream banks exposed to fast flowing water, including flood waters (overflow waters).

According to *Agroforestry Notes*, a publication of the USDA, riparian buffer strips can stabilize stream banks and protect flood plains, reduce nonpoint source pollution, enhance aquatic and terrestrial habitats, improve landscape appearance, provide harvestable products and function as windbreaks.⁹

Buffer strips can be designed to meet the landowners' objectives and land characteristics, such as slope, or drainage. The Forestry Division of the MDC implements a Stewardship Incentives Program (SIP) to help landowners with various land management practices, including forest and agroforest improvements, stream corridor improvements, and soil and water protection and improvement. This is a federal program, administered by the USDA. Very little money actually comes to Missouri to implement the SIP. Another federal program administered by the USDA, the Conservation Reserve Program (CRP), also helps to protect water resources by taking highly erodible land out of rowcrop production. A number of water quality initiatives embody agroforestry practices, especially the use of riparian buffer strips. In addition, there is now a "continuous CRP sign-up" for buffer strips and stream corridor protection. Either cropland or pasture land qualifies, with payments based on soil types, for buffers up to 200 feet wide. There also is an incentive given for the planting of trees in the buffer.¹⁰

Counties

County master plans and their contents, specifically mentioning the conservation of natural resources, and other matters such as bridges, forests, wildlife refuges and dams, are authorized in Chapter 64, RSMo. Section 64.040 is for first class, charter counties, and Section 64.231 is for first class non-charter counties. Section 64.550 is for second and third class counties, and Section 64.815 is for counties that use alternative planning and zoning. These four sections are virtually identical in their wording, even though each was adopted in a different year.

Section 64.975, RSMo, discusses natural streams, and how watercourses may be designated as such by voters in a county, thereby requiring special agency protection.

Case Law

No Missouri case laws have been identified that specifically address soil conservation as it pertains to water and water use.

Water Conservancy Districts

Water Conservancy Districts may be set up under the terms of Chapter 257, RSMo, for several purposes, including owning land and constructing engineering works. River Basin Conservation Districts also are called Water Conservancy Districts, and are covered in this chapter of Missouri law.

Case Law

No case laws have been identified that specifically deal with Water Conservancy Districts.

¹¹ Vandike, James E., *Surface Water Resources of Missouri*, p. 1.

¹² See also *Water Resource Sharing—The Realities of Interstate Rivers*, State Water Plan Volume VI, Water Resources Report Number 50, and the Boundary and Interstate Water section.

INSTREAM USES

Instream uses of water include public water supply intakes; sewage treatment plant effluent outfalls; recreational uses such as boating, fishing, waterfowl hunting, and swimming; commercial navigation; sand dredging and gravel extraction; irrigation water intakes; power plant and industrial cooling and process water intakes and outfalls; hydroelectric power generation; aquatic habitat, not only for fish and other water creatures, but also for birds, animals, and various plant species; and commercial uses such as fishing, riverboat travel, fur trapping, dining boat and showboat entertainment, and riverboat casino gambling.

Many of these topics are found throughout this volume. Others, such as fishing, waterfowl hunting, and fur trapping are not dealt with here, except to say that the MDC makes rules and regulations governing these activities pursuant to statutory law.

Uses of Interstate Water Flows

Because the mouth of the Missouri River is in Missouri, this state is the recipient of water from all the states upriver in the basin. Of the river's flow at the river gage at Hermann, approximately 65 percent comes from the upstream states, and 35 percent comes from Missouri.¹¹

Except for Iowa, all the upriver states of the Missouri Basin are "prior appropriation" water use states. Missouri and the other lower basin states of Iowa, Kansas and Nebraska are, at times, in an adversarial relationship with the upper Missouri River basin states in regard to water use. Section 640.405, RSMo, requires the Department of Natural Resources to represent and protect Missouri's interests in all matters pertaining to the interstate use of water.¹²

¹³ U.S. Constitution, Art.1, §8; and Art. 4, §3.

Case Law—Federal Jurisdiction

When interstate commerce is involved, interstate flows of water come under federal jurisdiction. Otherwise, use of interstate flows generally are adjudicated according to either the riparian rights doctrine or the prior appropriation doctrine, depending on location. Missouri follows the riparian rights doctrine. The two cases that follow expound on this topic.

The case of *F.P.C. v. Oregon*, 349 U.S. 435 (1955), focused on the powers of the Commerce Clause when in conflict with state regulatory powers. The court said that the Commerce Clause of the U.S. Constitution supersedes state regulatory authority. As applied, this case provides for the pre-emption of state laws on federal navigable streams by federal laws.

Cappaert v. United States, 48 L.Ed.2d 523, 96 S.Ct. 2062 (1976), dealt with reserved federal water rights. This case articulates what is called the "reserved water rights doctrine" of the federal government, which holds that federal rights are superior to state or private water rights. The court held, "when the federal government withdraws its land from the public domain and reserves it for a federal purpose, the government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation. Also, in doing so, the U.S. acquires a reserved right in unappropriated water which vests on the date of the reservation and is superior to the rights of future appropriators. The federal reserved water rights doctrine applies to water in navigable and nonnavigable streams.¹³ The implied reservation of water doctrine reserves to the government only that amount of water necessary to fulfill the purpose of the reservation of public land, and may include quantities of water to maintain or preserve items of scientific value or importance, or objects of historical interest. The federal reserved water rights doctrine applies to both surface water and groundwater. The McCarren Act amendment does not require the United States to perfect its water rights in state court."

Fish and Wildlife Habitat

The MDC is charged by statutory law with the administration of forestry, fish, and wildlife resource conservation. This is provided for in RSMo. Chapters 252 and 254. Specifically applicable to water use by individuals and industries, Section 252.150, RSMo, provides that owners of dams shall provide for the free movement of fish, including construction of a fishway to enable fish to have free passage up and down the watercourses at all times.

Sometimes state and federal laws are in conflict with each other. As it pertains to water use for fish and wildlife, the federal appellate court ruled, in *State of Washington Dep't. of Game v. F.P.C.*, 207 F.2d 391 (9th Cir. 1953), that federal licensing authority pertaining to commerce and navigation supersedes state wildlife laws. This holding is pursuant to the supremacy of the Commerce Clause of the U.S. Constitution.

Sand and Gravel Extraction

The mining of sand and gravel is covered in Sections 444.760 to 444.786, RSMo, as part of the Land Reclamation Act. Sand and gravel are identified as "industrial minerals." Gravel and sand are often extracted from flood plains or streambeds. This section of the law is administered by the Land Reclamation Program, DEQ, DNR.

Permits to mine sand and gravel from streambeds are granted by the appropriate district office of the U.S. Army, Corps of Engineers (the Corps), pursuant to the U.S. Clean Water Act, Section 404. Water quality certification by DNR, under the Clean Water Act, Section 401, also is required. Section 401 water quality certification, and Section 404 "dredge and fill" permits are handled jointly between DNR and the Corps, with the Corps as lead agency. In any jurisdiction participating in the National Flood Insurance Program (NFIP), a local permit must also be acquired by the applicant to remove gravel from watercourses, store gravel in a flood plain, build levees, and pursue other similar land use activities in the flood plain.

Industrial and Commercial Water Use

The law previously identified, which applies to individuals, likewise applies to businesses. Another industrial use includes cooling water for factories. Cooling water discharges must follow the standards set forth in permits that are administered by DNR.¹⁴ Commercial uses also include commercial barge (freight) and other (passenger) navigation, commercial fishing, and fur trapping.¹⁵

Case Law

Navigation, on federally navigable waterways, supercedes other instream uses that may be approved or permitted by the state. Navigational servitude is provided under the Commerce Clause¹⁶ of the U.S. Constitution and its validity has been upheld in numerous federal court decisions.

The case of *United States v. Ross*, 74 F Supp. 6 (1947) addressed federally navigable waterways. The "federal test" of navigability was cited by the court; "to meet the test of navigability as understood in American law a water course should be susceptible of use for purposes of commerce or possess a capacity for valuable floatage in the transportation to market of the products of the country through which it runs. Mere depth of water, without profitable utility, will not render a water course navigable in the legal sense, nor will the fact that it is sufficient for pleasure boating or to enable hunters or fishermen to float their skiffs or canoes. To be navigable, a water course must have a useful capacity as a public highway of transportation."

In *Green Bay & Miss. Canal Co. v. Patten Paper Co.*, 172 U.S. 58 (1898) the court said that federal jurisdiction [in navigable waterways] "preempts conflicting state water rights statutes."

This ruling would appear to supersede any state grants and permits or any private rights to gravel and sand extraction, as well as other private, commercial, or industrial uses of water in federally navigable rivers.

¹⁴ See Water Quality section.

¹⁵ Refer also to *Water Use of Missouri*, State Water Plan Volume IV, Water Resources Report Number 48, for more on industrial water use.

¹⁶ U.S. Constitution, Art. I, §8.

¹⁷ *Gibbons v. Ogden*, 22 U.S. (9 Wheat) 1 (1824), from John Marshall, Chief Justice, United States Supreme Court.

¹⁸ The federal government can restrict public use of navigable streams where the stream crosses the boundary of a federal military reservation or similar site, and can also restrict public use, when such use or navigation of a waterway is deemed unsafe.

¹⁹ The federal test for navigability is stated in *United States v. Ross*, 74 FS 6 (1947).

²⁰ *Elder v. Delcour*, 364 Mo. 835 (1954); and *Sneed v. Weber*, 307 S.W.2d 681 (1958).

Lewis Blue Point Oyster Cultivation Co. v. Briggs, 229 U.S. 82 (1913) was on right of access to a watercourse. The court held that, "the deepening, in the interest of navigation, of a channel across a navigable bay, the bed of which is used for oyster cultivation under grants from a state, is not a taking of property of the lessee of the oyster beds within the meaning of the Fifth Amendment. The public right of navigation is the dominant right in navigable waters and this includes the right to use the bed of the water for every purpose which is an aid to navigation. Whatever power the several States had (before the Union was formed) over navigable waters within their respective jurisdictions has been delegated to Congress, which now has all governmental power over the subject, restricted only by the limitations in the other clauses of the Constitution."

Navigability

Of all instream water uses, navigation is the only one provided for and protected by the U.S. Constitution (the Commerce Clause).¹⁷ All navigable rivers are subject to public use for navigation.¹⁸ The legal term for this is "navigational servitude." Determination of navigability may be made several ways.¹⁹ If a stream is navigable under federal determination, then the national government or the state government holds title to the streambed. State navigability²⁰ is discussed in the following cases.

In *State ex rel. Applegate v. Taylor*, 224 Mo. 393, 123 S.W. 892 (En Banc 1909) the court ruled that "the determination of whether a stream is navigable is the province of judicial determination rather than the legislature, unless the stream is navigable in fact."

The case of *Slovensky v. O'Reilly*, 233 S.W. 478 (Mo. 1921) concerned navigation and navigability of a stream. The court held that the test of navigability of a river, as stated by the Supreme Court of the United States, is that those rivers are navigable in law when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. Another test is whether, in its ordinary state, a stream or body of water has capacity and suitability for the usual purpose of navigation, ascending or descending, by vessels such as are employed in the ordinary purposes of commerce, whether foreign or inland, and whether steam or sail vessels.

Two years later, in *Doemel v. Jantz*, 180 Wis. 225, 193 N.W. 393 (1923) a Wisconsin court held that navigability of a stream, for easement of public travel, extends to the water's edge and expands and contracts as stream level rises and falls. *Wilbour v. Gallagher*, 77 Wash. 2d 306, 462 P.2d 232 (1969), restated the holding of *Doemel*, and applied it in the State of Washington.

Non-navigability was addressed in *Hobart-Lee Tie Co. v. Grabner*, 206 Mo. App. 96, 219 S.W. 975 (1920). The court held "if a stream is non-navigable in the sense that the state or government has not the title to the river bed, then the adjoining landowners' property owner-

ship runs to the thread of the stream and such ownership is subservient only to the rights of the public to use the stream as a highway upon which to float logs, ties, and such other merchandise as the volume of water will carry, and to tie up to the banks for repairs and to do anything thereon incidental to travel. The right to use a stream as a highway for floating logs, did not include the right to use or trespass onto the land of a riparian owner." (See Figure 13).

Navigation, Barges and Ferries—Statutory Law

Missouri law specifically regulates the operation of ferry boats, and specifically favors the use of barges for freight hauling.

Chapter 237, RSMo, mostly addresses ferries and wharves. Sections 237.010 to 237.200 govern the licensing of ferries in Missouri,

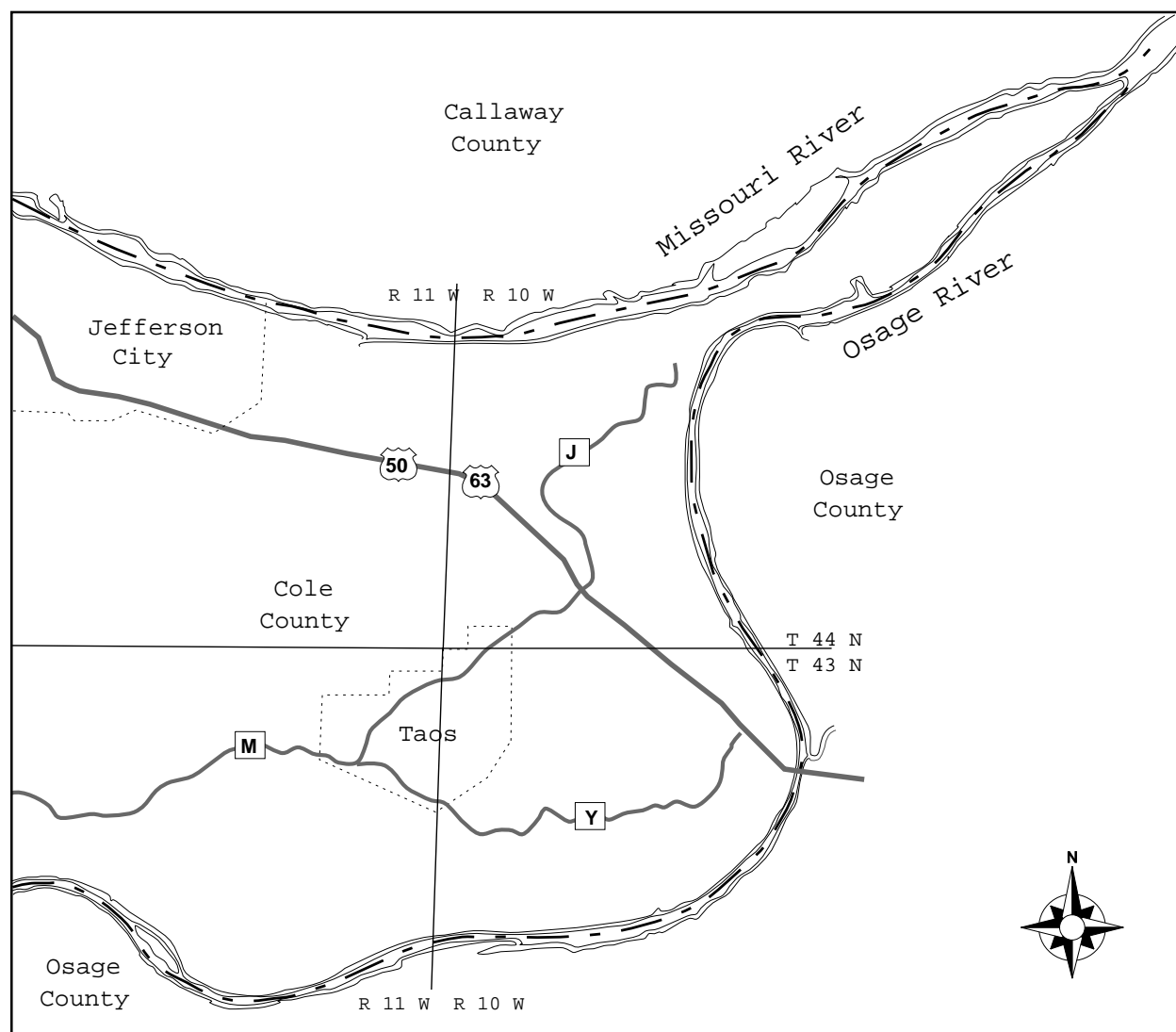


Figure 13. The "thread of the stream" used as a riverine boundary line. Source: Mo. Dept. of Transportation County Highway Maps.

²¹ This is discussed in more detail in the Water Supply section.

²² See also *Water Resource Sharing—The Realities of Interstate Rivers*, State Water Plan Volume VI, Water Resources Report 50.

rate-setting, and exclusive privileges. Section 237.210, RSMo, allows municipalities to lease wharves or landings. Commercial barge navigation is addressed more completely in the next section, Boundaries and Interstate Waterways.

The newest Missouri ferry in operation (1996) runs from near Dorena, in southern Mississippi County, to Hickman, Kentucky, across the Mississippi River. The Mississippi County Port Authority operates the Dorena ferry. The Waterways Division of MoDOT provides planning and technical assistance to port authorities.

Section 237.400, RSMo, calls upon the Governor of Missouri to work with upstream state governors to establish an interstate compact among Iowa, Kansas, Nebraska, and Missouri for the development of the Missouri River for barge traffic. A six-month time limit was written into the law. Still on the books, no results have been seen since the passage of this law in 1983.

Sections 70.370 to 70.441, RSMo, establishes the Bi-State Metropolitan Development District, a compact between Missouri and Illinois for the area around St. Louis. Among other things, this facilitates cooperation in regard to bridges, water supply, sewage disposal, wharves, docks, harbors, commodity storage for barge shipment, and other water-related matters.²¹

The Missouri and the Mississippi Rivers are the two major rivers of Missouri. Since both the Missouri and the Mississippi Rivers are navigable waterways, employed in interstate commerce, there are numerous federal laws dealing with them. On the state level, Section 26.130, RSMo, authorizes the governor to designate a state agency to negotiate with federal agencies, such as the U.S. Coast Guard, and the U.S. Army Corps of Engineers, in regard to federal projects.²²

Navigation on the Missouri River and the Mississippi River is affected by the regulation of outflows of water from the six mainstem flood control reservoirs on the upper Missouri River, and from tributary reservoirs, such as Harry S Truman Reservoir on the Osage River, Mark Twain Reservoir on the Salt River, and Smithville Reservoir on the Little Platte River. These dams are controlled by the Corps of Engineers. There is a *Master Water Control Manual* that governs the operation of the six main stem reservoirs, as authorized by the federal Flood Control Act of 1944 (embodying the Pick-Sloan Plan). The Corps also publishes an *Annual Operating Plan* for the Missouri River.

Excursion gambling boats are authorized by Sections 313.800 to 313.850, RSMo. The State Gaming Commission is established by Section 313.005, which governs gambling boats on the Missouri and Mississippi Rivers. (This authority was transferred to the Gaming Commission from the State Tourism Commission.)

Otherwise, navigation on the Missouri and Mississippi Rivers, as interstate rivers of commerce, is governed by federal laws and supervised by the U.S. Coast Guard, District 8, New Orleans. The Coast Guard places the navigational buoys and beacons in the major rivers. It determines when navigation is safe, and can close the rivers to navigation when conditions are unsafe.

Bridges— Effects upon Use of Watercourses

While Chapter 234, RSMo, deals with bridges, *per se*, there are numerous other sections of statute that also discuss bridges. Many highway and railroad bridges cross over bodies of water. All road bridges which cross navigable streams are considered part of the state highway system, and are maintained by the State Transportation Commission, per Section 227.080, RSMo. Railroad bridges across navigable streams may be built under the terms of Section 388.450, RSMo.

The formation of a corporation for the purpose of building a bridge or toll bridge, and the use of streets by the bridge corporation, are regulated under Sections 351.035 and 351.040, RSMo.

Because bridges must have abutments on the shore, and usually have piers placed in the streambed, cases that related to riparian rights, property values, access, and obstruction to navigation usually are pertinent. Three cases cited below touch on ownership issues, federal overriding rights, and obstruction.

The case of *United States v. Chandler-Dunbar Water Power Co.*, 229 U.S. 53, 62 (1913) brought out the navigation servitude power of the federal government. The court wrote that "the title of the owner of fast land upon the shore of a navigable river to the bed of the river, is at best a qualified one. It is subordinate to the public right of navigation. [Title to adjacent land,] however helpful in protecting the owner against the acts of third parties, is of no avail against the exercise of the great and absolute power of Congress over the improvement of navigable rivers. If, in the judgement of Congress, . . . structures placed in the river and upon such submerged land are an obstruction or hindrance to the proper use of the river for purposes of navigation, it may require their removal and forbid the use of the bed of the river by the owner in any way which in its judgement is injurious to the dominant right of navigation."

The case of *United States v. Chicago, M., St.P. & Pac. R.R.*, 312 U.S. 592 (1941) addressed navigational servitude, right of access, and the high water mark. The opinion of the court held that a railroad company whose road traverses an embankment built up from the low water mark in the bed of a navigable stream to a level above that of the ordinary high water mark is not entitled, under the Fifth Amendment, to claim compensation from the United States for the additional cost of protecting the embankment necessitated by the action of the Government in raising the water level above the natural high-water mark, by means of a dam, for the purpose of improving navigation. The power of the Government over navigation covers the entire bed of a navigable stream, including all lands below the ordinary high-water mark. Whether title to the bed is retained by State or is in a riparian owner, the rights of the title-holder are subservient to the dominant easement [of the U.S.]. (See Figure 14, The "Low Water Mark.")

The court ruled, in *Weller v. Missouri Lumber & Mining Co.*, 176 Mo. App. 243, 161 S.W. 853 (Spr. App. 1913) that "any man-made obstruction which prevents travel on an otherwise navigable stream

²³ Davis, P.N., "Recreational Use Of Water-courses," *Missouri Environmental Law and Policy Review*, Vol. 4, No. 2, 1996, p. 71.

²⁴ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 461.

²⁵ Missouri Organic Act of 1820, §2, 3 Stat. 545, 5 Mo. Rev. Stat. 5968.

²⁶ Mo. Const. of 1820, Art. X, §2; Mo. Const. of 1865, Art. XI, §2; Mo. Const. of 1875, Art I.

²⁷ Mo. Const. of 1945, 5 Mo. Rev. Stat. 5973.

²⁸ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 461.

is a public nuisance and may be abated by judicial action." In this case the court held that, "a jury must decide whether or not a stream is navigable."

Boating and Recreation

Riparian landowners may use, in a reasonable manner, natural watercourses and artificially created watercourses which have become natural with the passage of time for recreational activities such as swimming, boating, and fishing. Public usage rights are valid for both public watercourses (navigable under federal law or those with state or federal ownership of bed) and private watercourses (those which are floatable by recreational boats).²³

The Missouri case of *Elder v. Delcour*, 269 S.W.2d 17 (1954) recognizes the public right of recreational navigation in all watercourses that have flow sufficient to float a recreational boat.²⁴ "Congress mandated that Missouri," wrote the court, "like many Midwestern states created from federal territories,²⁵ must recognize free navigability by the public of the Mississippi and Missouri Rivers, their tributaries, and portages between them." This provision was derived from the Northwest Ordinance of 1787, art. IV, 1 Stat. 52 (1789).

Missouri put the free navigability provision into its first three state constitutions.²⁶ However, it was not included in the 1945 state constitution which is currently in effect.²⁷ "Although no longer part of the state constitution, it can be presumed that the free navigability provision in the Missouri Organic Act remains in force."²⁸

The case of *Greisinger v. Klinhardt*, 321 Mo. 186 (1928) dealt with the recreational use of lakes and streams. The court determined that a riparian has right of access to entire surface of artificial watercourse which became a natural watercourse with passage of time and that an artificial lake created from a navigable stream retains public recreational rights.

In *Sneed v. Weber*, 307 S.W.2d 681 (St.L. Mo. App. 1958) the court held that "the rule to be applied in Missouri, in determining whether or not a body of water is navigable, is to be found in the case of *Elder v. Delcour*, 364 Mo. 835, 269 S.W.2d 17. To be navigable under the Missouri rule, the stream must be capable of floating vessels or boats

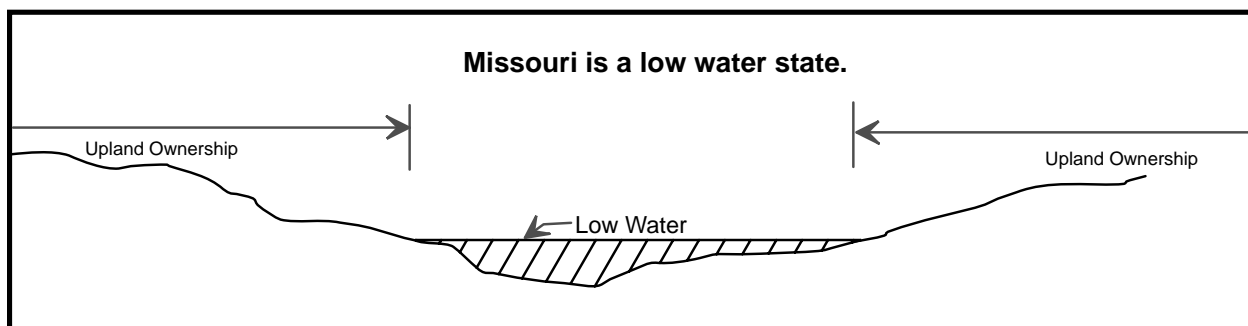


Figure 14. Cross-sectional drawing of a river, showing the meaning of the "low water mark" and "low water," as opposed to "ordinary high water." Missouri is a low water state, in terms of water law.

as are used in the customary modes of travel in pursuit of commerce. A stream is not navigable simply because a small boat may be navigated through a tortuous course. To be navigable, a stream must be navigable in its natural state, unaided by artificial means or devices; waters which may be made floatable only by artificial means are not regarded as navigable or as public highways."

Three years later, in *Conran v. Girvin*, 341 S.W.2d 75 (Mo. En Banc 1961) the court held that "riparians have the same rights in navigable waters as they do in nonnavigable waters with respect to stream bed and ownership use to the low water level which abuts their lands.²⁹ Title to the beds of navigable streams is in the respective states, unless granted away, subject only to the reservation and stipulation that such streams shall forever be and remain public highways, with the right of Congress to regulate commerce on them. A state may determine to what extent a riparian proprietor will be given rights over lands under navigable waters. A riparian proprietor in the state has title to the shores of navigable streams down to the low-water mark, and thus the property line between a riparian owner on a navigable stream and the state is the low-water mark subject to certain rights in the public to navigation. 'Mean low water' in a navigable stream is approximately the middle point between the upper and lower extremes of low water. Title of a riparian owner extends to the low-water mark, in view of the fact that a riparian owner is entitled access to the waters." (See Figure 14, The "Low Water Mark.")

In *State ex rel. Citizens' Elec. Lighting & Power Co. v. Longfellow*, 169 Mo. 109, 69 S.W. 374 (1902) the court held that a riparian owner may not construct or encroach upon a watercourse so as to impede the public's right of navigation and travel.

The case of *City of Springfield v. Mecum*, 320 S.W.2d 742 (Spr. Mo. App. 1959) established that the right of public navigation extends to water's edge. The city of Springfield constructed a dam and impounded the waters of a navigable river into an artificially created lake. Prior to creation of the dam the waters of the river were public waters, the submerged area of its channel was a public highway for travel and passage by boating and wading, and available to the public by unrestricted lawful means. The court held that "owners of land adjacent to the lake could not prevent the public from utilizing its recreational interests attached to the water, up to the water's edge, regardless of the location of the original watercourse."

AGRICULTURAL USES

Watering livestock and irrigation of farmlands are landowner and riparian rights that are part of the common law. Case law reinforces the rights of proprietors to use water for livestock³⁰ and for irrigation.³¹ Statutory law also recognizes the use of water for agricultural needs.³² Reasonable and unreasonable use of groundwater and water from a watercourse is decided by the courts on a case-by-case

²⁹ As per the "Missouri rule," cited in *Speed v. Weber*, 307 S.W.2d 681 (1958).

³⁰ *Bollinger v. Henry*, 375 S.W.2d 161 (1964), et al.

³¹ *Higday v. Nickolaus*, 469 S.W.2d 859 (1971), et al.

³² RSMo. 640.415.

³³ Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, p. 459.

³⁴ Davis, P.N., *The Law of Surface Water in Missouri*, p. 146.

³⁵ See also *Water Use of Missouri*, State Water Plan Volume IV, Water Resources Report Number 48, pp. 32-39.

³⁶ See also the Major Water Users section

³⁷ *Bollinger v. Henry*, 375 S.W.2d 161 (1964), and *Ripka v. Wansing*, 589 S.W.2d 333 (1979) from Davis, P.N., "Missouri," in Beck, ed., *Waters and Water Rights*, pp. 458-459.

³⁸ *Higday v. Nickolaus*, (1971), *Casanover v. Villanova Realty Co.*, (1948).

basis, with attention given to the quantity of water available, climatic conditions and the needs and uses of other riparians, with no single riparian being able to utilize the entire flow or source.³³ Diffused surface water is another source of water for farm ponds, which in turn are used for livestock water supply and sometimes irrigation. Missouri courts have not addressed one's rights attached to the use of diffused surface waters for livestock to the extent that they have for streams and groundwater.³⁴

Irrigation³⁵— Statutes and Cases

Sections 256.641 to 256.660, RSMo, establish the Southeast Missouri Regional Water District, and govern irrigation wells in the Bootheel Region of Missouri. Other wells used for irrigation are covered in other sections of Chapter 256, RSMo, including well-drillers. Major water users must register with the DNR, DGLS, Water Resources Program, pursuant to Sections 256.400 - 256.430, RSMo.³⁶

Irrigation has been specifically held as a valid riparian use.³⁷ Like other beneficial water uses, it is governed by the comparative reasonableness rule.³⁸ Water from either surface or underground sources for agricultural irrigation is treated, by the courts, as a legitimate riparian landowner use.

The case of *Higday v. Nickolaus*, 469 S.W.2d 859 (1971) also alludes to "the overlying owner's right to use the groundwater is whether it is for purposes incident to the beneficial enjoyment of the land from which it is taken." This statement, by the court, appears to include irrigation.

The ability to use water for irrigation, like most other private water use rights, are subservient to commerce and navigation, when the water supply is a navigable stream. The following case is an example.

The case of *United States v. Rio Grande Irrigation Co.*, 174 U.S. 690 (1899) further describes federal power, with regards to navigable waterways and nonnavigable tributaries, to protect navigation. "The unquestioned rule of common law was that every riparian owner was entitled to the continued natural flow of the stream; but every State has the power, within its dominion, to change this rule, and permit the appropriation of the flowing waters for such purposes as it deems wise. Congress recognized and assented to the appropriation of water in contravention of the common law rules; but it is not to be inferred that Congress thereby meant to confer on any state the right to appropriate all the waters of the tributary streams which unite into a navigable watercourse, and so destroy the navigability of that watercourse in derogation of the interests of all the people of the United States."

Livestock Watering

The use of water for livestock has been discussed in several cases. While the cases were initiated as damage suits stemming from pollu-

tion of water supplies, the courts, in finding for the plaintiffs, *de facto* validated the water use as "reasonable."

The judgement in *State ex rel. Wear v. Springfield Gas & Elec. Co.*, 204 S.W. 943 (Spr. Mo. App. 1918) affirmed the right of a public official to bring suit to stop and enjoin an industrial polluter of a public water supply where the waste had polluted a stream which was used as a livestock water supply.

Divelbiss v. Phillips Petroleum Co., 272 S.W.2d 839 (K.C. Ct. app. 1954) involved damage suffered by a riparian landowner resulting from petroleum releases from a pipeline. An oil company permitted petroleum products to be discharged at a pumping station into a small creek which crossed privately owned property, causing the pollution of livestock water supply. The court held that the polluter of the surface waterway is liable under nuisance laws for the value of the cows which died, the loss of value of the milk from the cows which died, the value of the loss of profits from contamination of the milk, the loss of value for depreciation of surviving cows, and the loss of profits from lowered milk production of surviving cows.

³⁹ See also *Water Use of Missouri*, State Water Plan Volume IV, Water Resources Report Number 48, 1996, Appendix 2.

MAJOR WATER USERS

Major water users, including municipalities and water districts, are required to register with and submit annual reports of water use to the Water Resources Program, DGLS, DNR, Rolla, by the Water Usage Law, Sections 256.400 - 256.430, RSMo. These sections also explain the purpose of requiring the information. Section 256.400 gives the following definition.

"Major water user", any person, firm, corporation or the state of Missouri, its agencies or corporations and any other political subdivision of this state, their agencies or corporations, with a water source and equipment necessary to withdraw or divert one hundred thousand gallons or more per day from any stream, river, lake, well, spring or other water source.

The purpose for this registration is provided in Section 256.405, RSMo, as "to ensure the development of information required for the analysis of certain future water resource management needs." Pursuant to this section, the Water Resources Program compiles the information annually to determine reported water usage in Missouri.³⁹

Municipalities

Section 71.287, RSMo, calls for reports of water usage to the Water Resources Program for gathering data on major water users of the state, for planning and other purposes. Section 70.115, RSMo, further states that cities and counties may contract with the U.S. government for recreational facilities along rivers. Section 71.287, RSMo, makes the municipal annual reports voluntary.

⁴⁰ A bay or mooring basin connected to the river but without current of the river flowing through it.

⁴¹ DuCharme and Miller, p. 39.

Case Law

No cases were identified that pertained to the Major Water Users Law.

PORTS AND HARBORS

In Missouri, ports and port authorities are found only on the Missouri and Mississippi Rivers. There are harbors on recreational lakes (for example, the Lake of the Ozarks, and Lake Taneycomo). Some ports have slack-water harbors,⁴⁰ an example of which is the Southeast Missouri Regional Port Authority at Scott City.

There are 6 port authorities presently in active existence in Missouri, under Chapter 68, RSMo. These are the Kansas City Port, the Howard/Cooper Counties Regional Port, the St. Louis City Port, the Southeast Missouri Regional Port (near Scott City), the New Madrid County Port, and the Pemiscot County Port. Others are organized, and in the port planning stage. (See Figure 15, Missouri Port Authorities.)

The topic of Title VI, RSMo, is County, Township, and political subdivision government. Cities and counties are authorized to form port authorities under Chapter 68, RSMo. The State Transportation Commission is charged, in Section 68.065, with developing a state-wide plan for waterborne commerce, and encouraging coordination with the state plan. The Missouri Department of Transportation (MoDOT) has an office that works with waterways and port authorities. Section 68.025, RSMo, lists the powers of a port authority. MoDOT is authorized to provide grant funding to support port authorities. The State Transportation Commission's powers relative to port authorities are spelled out in Section 68.065.

Case Law

The case of *United States v. Rands*, 389 U.S. 121 (1967) addressed federal jurisdiction under navigational servitude and port sites. The interests of riparian owners are subject to the federal government's power to control navigable waters and the port-site value of land condemned for a federal lock and dam is not compensable under the Fifth Amendment.

POWER GENERATION

Two types of electrical power generation facilities use large quantities of water for power and cooling. Thermoelectric power plants, nuclear and fossil fueled, use water for cooling and to drive steam turbines. Hydroelectric power plants, power site dams on rivers, use running water to drive water turbines. Coal-fired thermoelectric plants produce most of the electricity used in Missouri.⁴¹

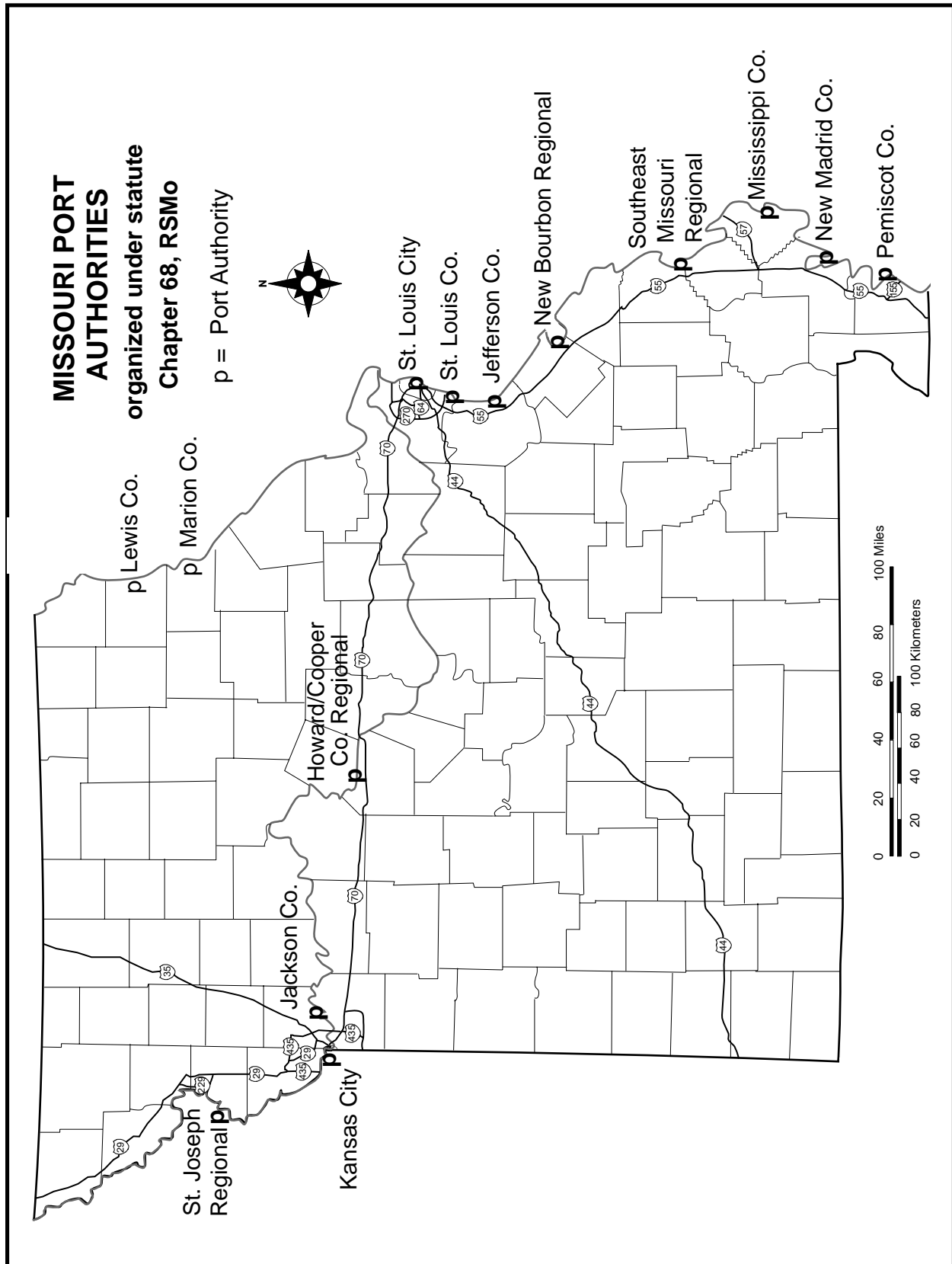


Figure 15. Map of Missouri port authorities organized under Chapter 68, RSMo. Source: Mo. Dept. of Transportation, Waterways Division.

⁴² Dams are also discussed in the Protection From Water section.

⁴³ DuCharme and Miller, p. 39.

Statutory Law

Nuclear power plants generally are regulated by the Federal Energy Regulatory Commission (FERC), but the decommissioning of such plants is governed by Section 393.292, RSMo. Nuclear power plants generally take cooling water from a river, and return most of it to that river. The only nuclear power plant in Missouri at the time of this writing is located at Reform, in southern Callaway County. This facility uses water from the Missouri River. It is owned and operated by AmerenUE.

Hydroelectric power plants also are regulated by the FERC, but Section 393.030, RSMo, deals with the right to take water from a non-navigable stream, and erect a dam for power generation.⁴² The right to condemn land for this purpose also is provided in this statute. Bagnell Dam, forming the Lake of the Ozarks, is an example of a hydroelectric power dam. It also is owned by AmerenUE. Power generation is the largest use of water in Missouri.⁴³

Case Law

Most of the following water use for power generation cases were decided in federal courts, because hydroelectric power generation usually requires the water flow of a large, navigable river, which comes under the Commerce Clause of the U.S. Constitution.

United States v. Appalachian Elec. Power Co., 311 U.S. 377 (1940) dealt with navigation, and federal licensing authority. "In determining the navigability of a river, the federal government, through the powers of the commerce clause, may properly consider the feasibility of interstate use after reasonable improvements are made to the character of the river, such as a dam, and thereby render a previously unnavigable waterway navigable."

First Iowa Hydro-Elec. Coop. v. F.P.C., 328 U.S. 152 (1946) addressed federal regulatory powers. "Under the authority of the U.S. Constitution, the authority of the United States to govern interstate commerce, is authorized to make rules preempting state law, a power which is wholly independent of the question of private ownership. A federal agency which is authorized by congress to develop hydroelectric projects on waters subject to the commerce power does not have to submit to state rules and regulations as to how the water should be used."

The case of *Namekagon Hydro Co. v. F.P.C.*, 216 F.2d 509 (7th Cir. 1954) concerned the consideration of the economic value of recreational opportunities when siting a hydro-power facility. The court wrote, "when reviewing an application for a license to construct a facility, the Federal Power Commission considers, among other things, the unique quality and recreational value of the river. Efforts to attach only monetary values to such recreational interests of unique and most special types must fail if the purpose is to show all that will be affected if such recreational resources are impaired or destroyed. The recreational resources of a unique and most special type fall within

a wide range as to their local, regional or national importance. The consideration of public interest is no less because a unique and special type recreational resource may have local or regional interest."

The case of *F.P.C. v. Niagara Mohawk Power Corp.*, 347 U.S. 239 (1954) was about federal jurisdiction and riparian power company rights. The court held that "the federal Water Power Act of 1920 did not abolish private proprietary right, existing under state law, to use waters of a navigable stream for power purposes. Water rights claimed by a licensee are usufructuary rights to use the water for the generation of power, as distinguished from claims to the legal ownership of the running water itself and constitute a form of real estate known as corporeal hereditaments. There is a dominant servitude, in favor of the United States, under which private persons hold physical properties obstructing navigable waters of the U.S. and all rights to use the waters of those streams, but the exercise of that servitude, without making allowances for pre-existing rights under state law, requires clear authorization. Riparian water rights, like other real property rights, are determined by state law."

United States v. Twin City Power Co., 350 U.S. 222 (1956) dealt with federal jurisdiction of navigational servitude. The court held that "just compensation for lands taken by the United States for navigation improvement does not include the value of water power in flow of stream."

The case of *Scenic Hudson Preservation Conf., v. F.P.C.*, 354 F.2d 608 (2d Cir. 1965) involved legal standing for relief of review of federal licensing application, protection of natural environmental qualities and historic value from hydropower development, and active court involvement in developing alternatives. The court wrote, "economic injury is not a prerequisite for protection or relief where plaintiffs have shown a direct personal interest in a hydropower development proposal. Limiting, however, representation of individuals or groups who represent common interests does serve to expedite the administrative process of license application review. The right of the public must receive active and affirmative protection at the hands of the Federal Power Commission during the license application and public comment review process. The Commission must see to it that the record is complete and must include, as a basic concern during the process, the preservation of natural beauty, and of national historic shrines, keeping in mind that the cost of a project is only one of several factors to be considered."

A Missouri case, *F.P.C. v. Union Elec. Co.*, 381 U.S. 90 (1965) involved federal licensing authority on nonnavigable tributaries where navigation would be affected on the navigable main channel. The court ruled that "the Commerce power of Congress encompasses the interstate transmission of electricity without regard to federal control of tributary streams and navigation. The language invokes full Congressional authority over commerce not merely the regulation of navigation or water commerce."

The court ruled, in *Nantahala Power & Light Co. v. F.P.C.*, 384 F2d 200 (4th Cir. 1967) federal licensing authority on non-navigable streams where navigation is not affected but power is transferred to another state falls under the Commerce clause rather than navigational servitude.

Udall v. F.P.C., 387 U.S. 428 (1967) concerned federal licensing authority. The court said that "although the issue of federal development of water resources must be evaluated by the Federal Power Commission (FPC) in connection with its consideration of the issuance of any license for a hydroelectric project, the determinative test is whether the project will be in the public interest."

BOUNDARY AND INTERSTATE WATERS

Often, watercourses serve as property lines between landowners, as well as boundary lines between governmental jurisdictions, such as counties and states. For example, the Missouri River is a boundary for counties across the central part of Missouri (with a few interesting exceptions, such as that part of Jackson County lying north of the river). However, just where that boundary or property line is located is a matter of conjecture, until it is legally defined. In addition, the Missouri River, the Mississippi River, the White River, and others are interstate rivers. Their use for navigation and commerce is governed by federal law. Riverbed ownership is another topic that has been addressed by the judiciary.

BOUNDARIES, BOUNDARY WATERS

This section deals with property and boundary lines delineated by impounded waters and by navigable and non-navigable watercourses. Property lines that are defined by the position of a stream affect the property owner's rights, and therefore the owner's ability to use his land, as well as his fee and tax responsibilities. Boundary disputes between individual landowners fall almost entirely within the realm of case law, as discussed below. Boundaries of counties have been set by statute. Boundary disputes involving state lines (between states) are more equally addressed by cases and statutes, and include the creation of boundary negotiation commissions or interstate compacts. The U.S. Supreme Court is the court of original jurisdiction in disputes between states.

Statutory Law

In Missouri, the names of counties and their boundaries are set by statute. Many of the counties have some part(s) of their boundaries delineated by the course of a river or stream. Land surveyors utilize Section 46.010, RSMo, for the legal description of the boundaries of each county of Missouri. County lines that are riverine-based are dispute-prone.

¹ An interstate compact must be enacted by all affected states and ratified by Congress before it legally goes into effect as law – see U.S. Constitution, Art. I, §10, ¶3; see also holding of the U.S. Supreme Court in *Texas v. New Mexico*, 462 U.S. 554 (1983).

² Michael Flowers, Program Director, Land Survey Program, DGLS, DNR, personal conversation, March 10, 1999.

³ A braided channel is a stream pattern characterized by two or more channels which divide and rejoin around islands, instability of course and identification of main channel, and avulsions – Dunne and Leopold, pp. 625–27.

⁴ Interagency Floodplain Management Review Committee, *Sharing the Challenge: Floodplain Management into the 21st Century* (The Galloway Report), p. 53.

⁵ “The thread of a stream is the centerline of the main channel formed equal distance between the water’s edge[s] at low water stage.” –Elgin, “Missouri Riparian Boundaries”, p. 3.

⁶ *Sharing the Challenge: The Galloway Report*, p. 53.

⁷ Missouri Basin States Association, *Conference Proceedings, The Pick-Sloan Missouri Basin Plan, Omaha, Neb.*, 1983, p. vii.

⁸ Missouri Basin States Association, *Conference Proceedings*, p. vii.

⁹ Missouri Basin States Association, *Conference Proceedings*, p. vii.

¹⁰ Missouri Basin States Association, *Conference Proceedings*, p. vii.

¹¹ *Sharing the Challenge: The Galloway Report*, p. 9.

Notably, the state line can be an uncertain thing at some times and in some places. Section 7.002, RSMo, (formerly RSMo. 7.240) sets up a mechanism to handle negotiations with the State of Nebraska on the subject of the boundary with the State of Missouri. The boundary, usually considered to be the Missouri River, has changed course many times and has been modified by the U.S. Army, Corps of Engineers. Formerly called the Nebraska Boundary Commission law, this law now is cited as the Missouri-Nebraska Boundary Compact, last amended in 1997. Landowners along this boundary have been troubled for some time by the question of to whom (what jurisdiction) to pay property taxes. This statute was first enacted in 1990. A similar law to resolve boundary disputes was enacted by the Nebraska Legislature, in 1998.¹ The Nebraska and Missouri compact was signed by President Clinton on Nov. 12, 1999, and set the boundary between Nebraska and Missouri as the centerline (the thread) of the Missouri River except for the ground known as McKissick’s Island, a part of Nemaha County, Nebraska, per a U.S. Supreme Court decision rendered in 1904.* The Land Survey Program, Division of Geology and Land Survey, Missouri Department of Natural Resources, has surveyed the negotiated boundary with Nebraska.² (See also Appendix 5, Recent Legislative Action, 1998, Nebraska.) *Surveys and maps are on file with the Secretaries of State of the two states and copies are available from DNR/DGLS, P.O. Box 250, Rolla, MO 65402.

Background to Boundary History of the Missouri River

The recent history of the river is worth mentioning. The problem regarding the Nebraska boundary is intertwined with the work of the Corps of Engineers, in making the Missouri River more easily navigable in the 20th Century. Where formerly the river had what is termed a “braided channel,”³ with numerous islands and swift, muddy flows,⁴ the boundary was agreed upon in the 19th Century as following the major “thread of the stream.”⁵ The Missouri River became an interstate boundary in 1820, revised after the Platte Purchase of Indian lands in 1836. There was a major avulsion in the 1867. The Corps began changing the river about 1879. Between 1879 and 1954, human actions (engineering works) and natural events (floods) shortened the river by 45.6 miles.⁶

Floods and droughts have been common in the Missouri River Basin. Shallow-draft steamboats have navigated the Missouri River since 1819, eventually reaching as far upstream as Fort Benton, Montana.⁷ Steamboat traffic probably peaked about 1880.⁸ The Missouri River was once nicknamed the “graveyard of steamboats” due to difficulties of navigation.⁹ The Flood of 1844 was said to have been the greatest known flood in the Lower Missouri River Basin.¹⁰ However, the Great Flood of 1993 is generally conceded to have equaled or surpassed it¹¹ in places. The drought period of the 1930s in the Missouri River Basin was of longer duration and more devastating than any previously recorded. During the entire period, precipitation av-

eraged 14 percent below normal, and was 30 percent below normal for two years. In some localities, the deficit was even more severe.¹²

Before the federal Pick-Sloan Plan was adopted (as the Flood Control Act of 1944¹³), there were usually two annual rises in the Missouri River.¹⁴ The "April Rise" resulted from spring rains and Great Plains snowmelt. The "June Rise" (which sometimes came in July) resulted from Rocky Mountain snowmelt. The Missouri River was notorious for riverbank sloughing,¹⁵ island formation, erosion, accretion, and channel changes, with the river doing most of its "work" during high water stages (high flows). Of course, some years there were low flows due to drought. The Pick-Sloan Plan included, among other things, building dams to impound reservoirs to hold back floodwaters, and to release impounded waters for low flow augmentation, to help navigation and water supply in the Lower Missouri Valley during droughts.¹⁶

The Corps of Engineers, in working to improve navigation on the Lower Missouri River, chose the "straightest" channel lines possible for improvement, and closed off "side channels" so that they would fill with silt. The channels chosen for improvement were helped by "river training works" such as rock revetments and wing dikes, to help keep the river from changing its channel and to direct the energy of the river toward the center, thereby deepening its own channel so that towboats and barges could reach the head of navigation (below Gavin's Point, South Dakota). The straightest channel lines chosen by the Corps of Engineers for improvement were not always the interstate boundary lines on the maps of the time, leaving state boundary lines in strange places.

Section 46.010, *RSMo*, deals with the situation when a watercourse boundary (deemed to be the middle of a river, called the "thread of the river") determines a political (county) boundary. Sometimes rivers form county boundaries, in whole or in part. (See Figure 12.) Changes in river courses have sometimes left the legal boundary far from the present-day river channel. The section on avulsions, below, provides more information on channel changes. (See Figure 18.)

Case Law

Under riparian doctrine, individual riparian rights are vested in, and arise from, the ownership of land that abuts the body of water, or the land that the body of water crosses. Title and ownership are in the land, rather than the water. Widely accepted under common and case law, when a boundary line is identified on property records as "following the thread of the stream" and a sudden change in the course of the stream takes place (avulsion), the boundary line remains with the path of the old stream bed. However, following the same scenario, when the path of the stream changes gradually over time (by erosion and accretion), the boundary line follows the path of the changing stream bed. These topics are more fully discussed in the following cases.¹⁷

¹² Missouri Basin States Association, *Conference Proceedings*, pp. viii and ix.

¹³ Missouri Basin States Association, *Conference Proceedings*, p. x.

¹⁴ Simpson, pp. 125-6, quoting from the case, *Nebraska v. Iowa*, 143 U.S. 359 (1892).

¹⁵ Pronounced "sluffing;" earth falling off the stream banks into the water in large chunks, "any castoff layer" -*Webster's New World Dictionary*. See also Simpson, p. 126.

¹⁶ Missouri Basin States Association, *Conference Proceedings*, pp. 24-25.

¹⁷ See also Accretions, below, and in the Glossary.

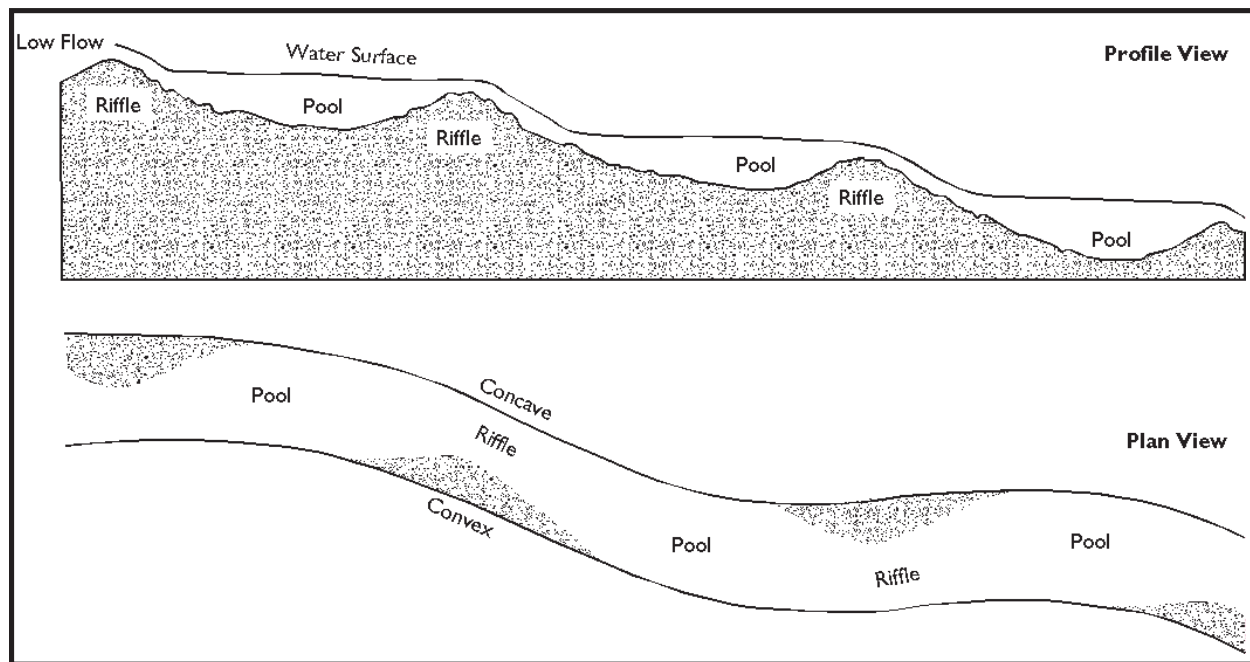


Figure 16. River Dynamics I: Riffle-Pool Complex -- A. Profile View, and B. Plan View, showing how many streams and streambeds interact. Source: Dunne, Thomas, and Leopold, Luna, *Water in Environmental Planning*, Freeman and Co., New York, 1978, p. 626.

Stream Bed Boundaries

In the case of *Bratschi v. Loesch*, 330 Mo. 697, 51 S.W.2d 69 (1932) the court clearly addressed streambed boundaries. The court held that "where a non-navigable stream of water constitutes the dividing line between two tracts of property, absent reservation in deed showing contrary intent, the possessor on each side owns to the thread of the stream. Where a change in the course of the stream forming the boundary between the properties is slow and gradual, the boundary line changes with the course of the stream, the thread of which continues to be the boundary line."

The holding was furthered in the case of *Brown v. Wilson*, 348 Mo. 658, 155 S.W.2d 176 (1941). "Where a nonnavigable stream of water constitutes the dividing line between two tracts of land, the possessor on either side, absent contrary restrictions or reservations in his deed, holds to the center of the thread of the stream. Where a subsequent change in the course of the stream is by the slow and gradual process of accretion, the boundary line changes with the stream, entitling the one owner to whatever is added to his land by reason of accretion. When the stream changes its course suddenly or in such manner as not to destroy the identity of the land between the two channels or to render it incapable of identification, the process is not one of accretion and the boundary line remains as it was before the change, in the channel of the stream."

In a more recent case, *Skinner v. Osage County*, 822 S.W.2d 437 (1991) the court system addressed the boundary question on a non-navigable river. The courts based their decision on past cases, holding that "on a non-navigable river, the riparian owners own title to the bed of the river to its central line or thread. The title to an island

in the stream follows title to the land boundary where it is found. Title to an island formed by vertical accretion in a nonnavigable river is with the riparian owner."

Boundaries and Navigable Watercourses

Four major rivers serve as state boundary lines for Missouri. The entire eastern boundary of the state is defined by the Mississippi River (except for avulsions). The Missouri River forms the state line in the northwest with Nebraska and Kansas, the St. Francis River forms the western boundary of the "Bootheel" with Arkansas, and the Des Moines River defines the Iowa state boundary line in the northeast corner of Missouri.¹⁸ In total, Missouri has approximately 700 river miles of state boundary waters.

In the case of *Benson v. Morrow*, 61 Mo. 345 (1875) the court reached decisions on the determination of navigability of streams and on ownership of lands along those streams. "Under the acts of Congress and the decisions of the United States Supreme Court (7 Wal. 272) the ancient doctrine distinguishing navigable and non-navigable rivers by their position above or below tide water, is done away with, and the Missouri River is a navigable stream," wrote the court. "And hence, as in other cases of navigable rivers, the proprietor of land on its banks owns only to the water's edge. The terms 'avulsion' on the one hand, and 'gradual and imperceptible accretion' on the other, may with propriety be dispensed with in speaking of alluvion formed by the Missouri River. An unnamed and undisposed of island in the Missouri River belongs to the United States and if alluvion forms thereto, connecting with another privately owned island, the private owner does not become the owner of the alluvion so formed. However, if alluvion forms from the owned island to the nameless island, then the owner becomes entitled to ownership of the nameless island by accretion."¹⁹

In the case of *Cooley v. Golden*, 117 Mo. 33, 23 S.W. 100 (1893) the court found that landowners adjacent to a federally navigable stream do not have ownership rights which extend to the middle of the stream, but rather only to the water's edge. When either a navigable or nonnavigable stream suddenly changes course, creating a new channel, the owner of the shore does not acquire title to the abandoned channel. Land which abuts a large navigable river, such as the Missouri River, passes in title only and only to the water's edge, but vests title to land beneath the water with the state. When an island forms in a navigable river and by accretion is united to the mainland, the owner of the mainland does not acquire ownership of the island, but rather only to accretions formed from his land.

Three years later, the courts confirmed portions of *Cooley* in the case of *Hahn v. Dawson*, 134 Mo. 581, 36 S.W. 233 (En Banc 1896) by holding that the riparian landowner does not take title to islands formed in navigable waters.²⁰

This line of judicial reasoning was sustained and further developed in *Peterson v. City of St. Joseph*, 156 S.W.2d 691 (1941) in which

¹⁸ Vandike, *Surface Water Resources of Missouri*, p. 3

¹⁹ See Accretion and Avulsion, below.

²⁰ Since the passage of state legislation in 1971, islands which are formed in the Missouri and Mississippi Rivers are granted to the Missouri Conservation Commission pursuant to Section 241.291, RSMo.

²¹ Section 241.290, et seq., RSMo.

²² "The low-water mark is the water's edge, that being the only line continuously touched by the water and being the only way the riparian owner will have continuous access to the water." —Elgin, "Missouri Riparian Boundaries", p. 3.

²³ Simpson, p. 158.

²⁴ Simpson, p. 158.

²⁵ Dunne and Leopold, p. 626.

²⁶ Webster's New World Dictionary.

the court addressed property boundaries, and accretions to land along, and islands in, a navigable waterway. Peterson claimed 87.31 acres of land were formed from the Missouri River by accretion to an island or by abandonment of an adjacent old river channel, the island belonging to Buchanan County, from whom he received patent title. The City of St. Joseph claimed the tract of land, lying next to the city airport, was formed by accretion to the airport lands and claimed title to land on these grounds. The court held that, "accretions must, as a rule, in their formation, preserve uninterrupted contiguity with the shore of a stream in order that the owner of the land bordering on the stream may claim ownership of the new lands, and hence alluvion can not become an accretion to land by extending itself until it reaches the land, except where the title to the land extends to the center of the stream. Riparian owners along the Missouri River own to the water's edge only, since it is a navigable stream. As such, riparian owners may claim accretions only where gradual and imperceptible and contiguous with their land at the water's edge. Islands forming in the stream, continuing until they unite with the main bank is not an accretion."

In the more recent case of *Volkerding v. Brooks*, 359 S.W.2d 736 (Mo. 1962) the court ruled that "by acts of the General Assembly,²¹ lands belonging to the State and formed by recession and abandonment of old beds of lakes and rivers were granted and transferred to the counties in which the lands were located. A riparian owner owns to the low water mark on navigable streams.²² Where there were accretions to land on both sides of a navigable stream until both shores met, title by accretions would not extend beyond the point of meeting." (See Figure 17.)

Accretions

Each state has its own rules, but the general legal effect of accretion is that the riparian landowner assumes possession of land made by the process called accretion.²³ Accretions can occur by the natural processes of erosion and deposition in streams and rivers. Also, the process can be caused or accentuated by human intervention. For Missouri, accretion occurs in alluvial streambeds, that is, streambeds that have been made by the stream itself over geologic time, carrying and depositing sediment, and then eroding that sediment to carve its flow lines. "Natural rivers do not flow at constant discharge rates. As the flows over the years increase and diminish, the rates of erosion and accretion are changing all the time and at different places along the banks."²⁴ (See Figures 16 and 17, River Dynamics I and II.)

The curves in the path of the channel of a stream (or the flow lines) are called meanders. Meanders tend to migrate by eroding concave banks and depositing the sediment on convex banks.²⁵ The word, alluvium, means sediment deposited by water. Sometimes it is spelled, alluvion, usually in legal works, where it means, "sedimentary material."²⁶

Flowing water tends to pick up sediment. The sizes of the particles of sediment that a river can carry depend on such factors as the

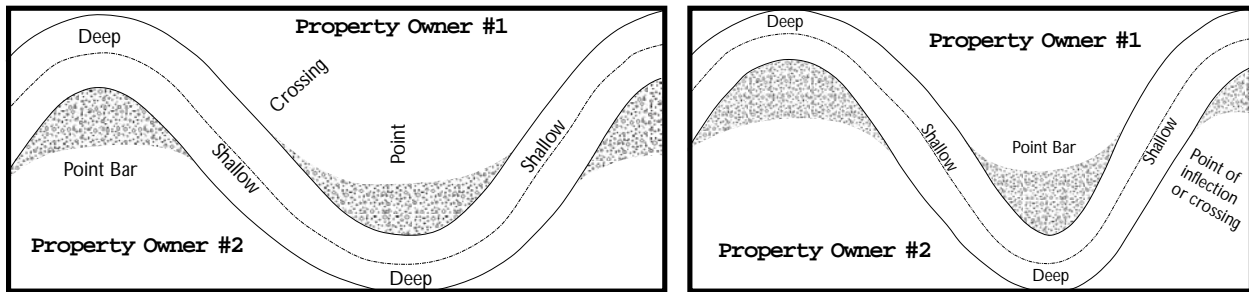


Figure 17. River Dynamics II: Erosion and Accretion. Non-meandering, or "straight" rivers are not perfectly straight. They do have deep and shallow places called, respectively, pools and riffles. Sometimes riffles are submerged, and sometimes riffles are visible (at low flows). The distances between pools and riffles depend in part on the geology of the channel, and in part on the grade (or slope) of the channel. As the river or stream flows around bends, inertia causes erosion on the outside of the bank, and deposition on the inside of the bank, creating concave or convex shapes. If the geology allows it, these actions lead to meandering. Most meandering occurs in the alluvium of the riverbed, the sediment laid down by the river itself. Generally, the more gentle the slope, the greater the tendency to meander. (After Durne and Leopold.)

volume of flow and the velocity of flow. "More particles are picked up (eroded) where the velocity is the highest—the situation usually found along the outside of curves in the flow. Where the velocity of the water slows down, the particles tend to drop to the bottom. The velocity is lower where there are deeper pools²⁷ or near the inside of the bends. In uniform bed material the entire meander will tend to travel down the valley and outward. Consider the area on the inside of a meander as it tends to move down valley in this manner: There is deposition on the inside of the curve which is called accretion."²⁸

"As the river bank under accretion is forming, the localized direction and quantity of the flow is simultaneously changing somewhat. With each change in direction some material is cut away and re-deposited."²⁹

"The slow deposit of soil that is made grain by grain by the action of water is called accretion. The legal significance is that the owner is allowed to take ownership of the accretions to his riparian lands unless held otherwise by a court of law or by statutory law."³⁰

Along the Missouri and Mississippi Rivers, it is recognized that accretions of land can occur because of the placement of artificial devices in the river. For example, what the Corps of Engineers calls "river training works," including wing dikes made of large rocks, have been built along the shores of these two rivers for the purpose of shifting the current toward the center of the river, thereby deepening the channel for the benefit of navigation. Sediment is carried by the flow of the river, and when the current slows, downstream of the wing dikes, the sediment is deposited along the shore. That, and the deposition of sediment during overbank flooding, has, over the years, filled many areas along the river.³¹

Avulsion

Avulsions (sometimes spelled evulsions) merit consideration of the physical forces that cause such a change. "Most avulsions occur in valleys which consist of sediments that the river itself has deposited in geologic times past. Such rivers are referred to as alluvial rivers."³²

James Simpson, in his book, *River & Lake Boundaries*, writes, "Rivers that have a relatively flat slope and which are flowing in their

²⁷ As pertaining to the characteristics of stream hydrology, pools are typically areas of deeper, slower flowing water as opposed to riffles, and are determined by the relative quantity of flow, width of stream, and the relative depth of water at a certain point on the stream at a given time — Durne and Leopold, *Water in Environmental Planning*, p. 622-27.

²⁸ Simpson, p. 158.

²⁹ Simpson, p. 159.

³⁰ Simpson, p. 160.

³¹ Changes in channel morphology, from *The Galloway Report*, p. 54.

³² Simpson, p. 120.

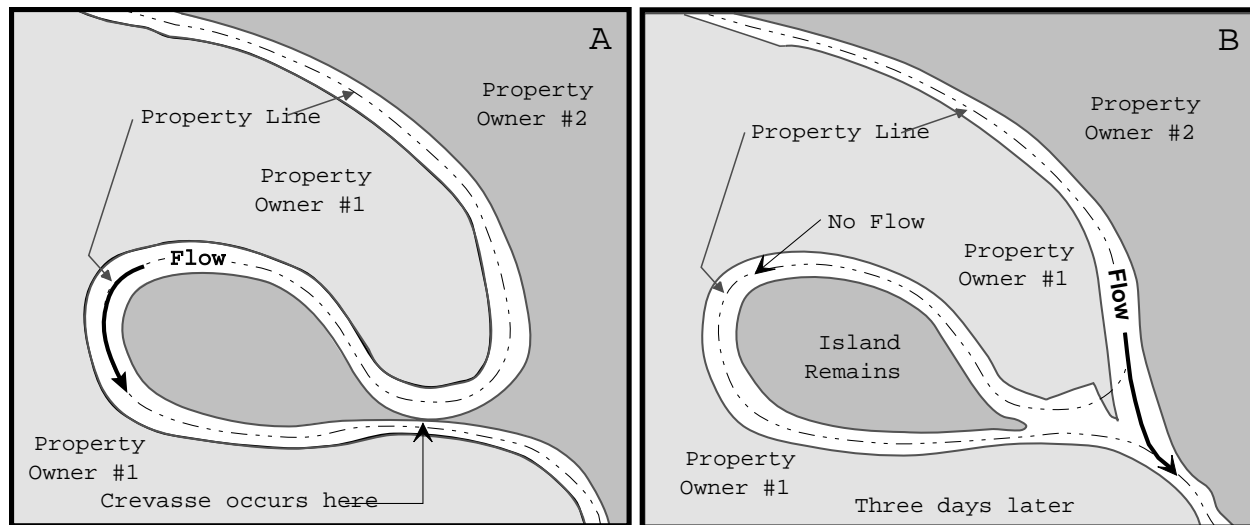


Figure 18. River Dynamics III: The Process of Avulsion -- A. Plan View, Before the Avulsion Occurs, and B. Plan View, After the Avulsion Occurs. Source: Simpson, p. 120.

³³ Simpson, p. 120.

³⁴ Simpson, p. 119.

own sediments generally develop S-shaped curves, called meanders. Especially where the current strikes a bank more resistant to erosion, the S-curves gradually grow tighter and tighter over periods of years until, sometimes, an upstream curve gets close to a similar downstream curve. (See Figure 18, River Dynamics III.)

"A classical avulsion begins when such an upstream curve finally opens a cut into the downstream bend. That is the beginning of an avulsion.

"At the instant of the breakthrough there is an immediate difference in water level between the two bends. ...the velocity through the breach may be up to 20 times the normal velocity of flow. This higher velocity greatly increases the river's erosive ability and power to carry sediment downstream.

"If the soil at the site of the breach is easily eroded, the high velocity flow will erode the breach until it approaches the average river width in a matter of hours..."³³

Case Law

In the 100-plus year old case of *Nebraska v. Iowa*, 143 U.S. 359 (1892), the U.S. Supreme Court gives this definition of avulsion. "Where a stream, which is a boundary, from any cause suddenly abandons its old and seeks a new bed, such change of channel, termed avulsion, works no change of boundary; the boundary remains as it was, in the center of the old channel, although no water may be flowing therein."³⁴

In this case, Nebraska had claimed that the banks of the Missouri River (the river forming the interstate boundary) were so unstable that the common law rule of avulsion should not apply. Immediately upstream from Omaha, Nebraska, an oxbow bend was created quickly by the river, and then cut through by the river in an avulsion, leaving the

previously Iowa land on the Nebraska side of the channel. Nebraska claimed that Iowa should not get to keep the land left on the west side of the river. The court held, "...[T]he only thing which distinguishes this river from other streams, ... is in the rapidity of the change caused by the velocity of the current; and this in itself... works no change in the principle underlying the rule of law in respect thereto." The court held that the rule of avulsion applies on the Missouri River and that the abandonment of an ox-bow channel caused the boundary to remain fixed in its former location.³⁵ This "island," as well as the remnant lake left behind, are called Carter Lake, today. (See Figure 19, Carter Lake, Iowa.)

Another federal court case that defines avulsion is *Bauman v. Choctaw-Chickasaw Nations*, 333 F2d. 785 (1964). That decision describes an avulsive change and the legal impact of it as, "A sudden change in the channel of a river, as occurs in the case of avulsion, does not affect title to the lands thus transferred from one side of the river to the other."³⁶

"The major factor in the navigable river will be the state ownership of the bed, which depends in turn on state law" unless it is an interstate boundary.³⁷ "Nonnavigable river avulsion limits are relatively easy. Each upland owner already owned to the center of the stream before the avulsion so there is no third entity, the State, involved" in ownership of submerged (or now dry) lands.³⁸ "Because each state's laws control the legal effect of a river channel change, legal advice is an absolute must."³⁹

³⁵ Simpson, p. 126.

³⁶ Simpson, p. 139.

³⁷ Simpson, p. 150.

³⁸ Simpson, p. 151.

³⁹ Simpson, p. 139.

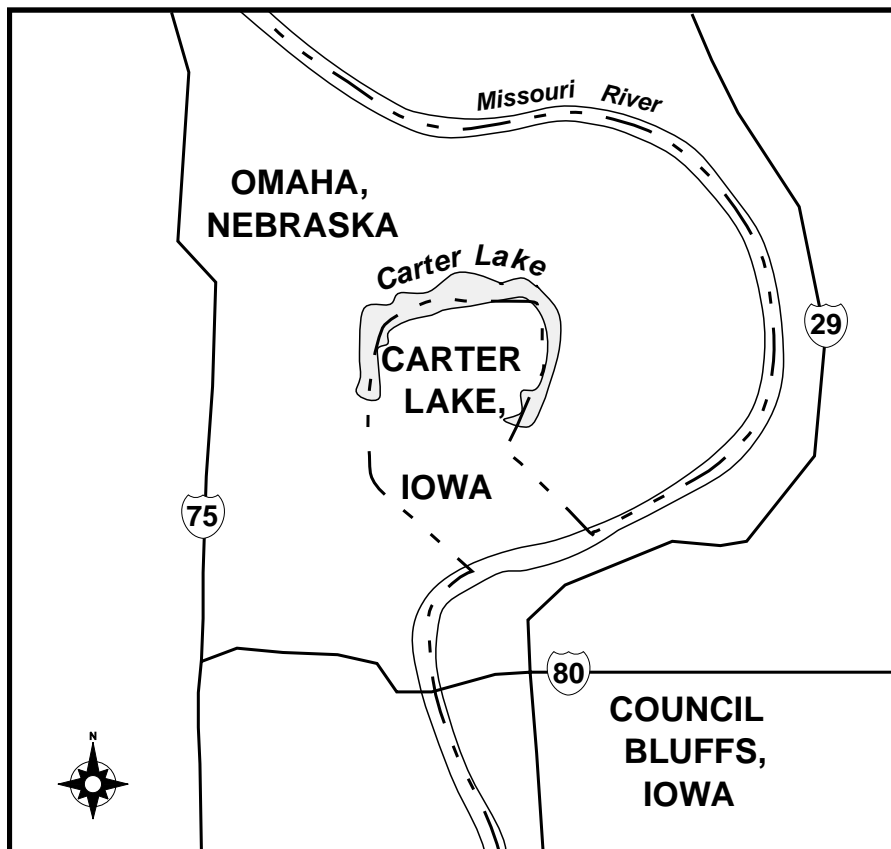


Figure 19. Carter lake, Iowa, on the Nebraska side of the Missouri River. Source: Iowa State Highway Map.

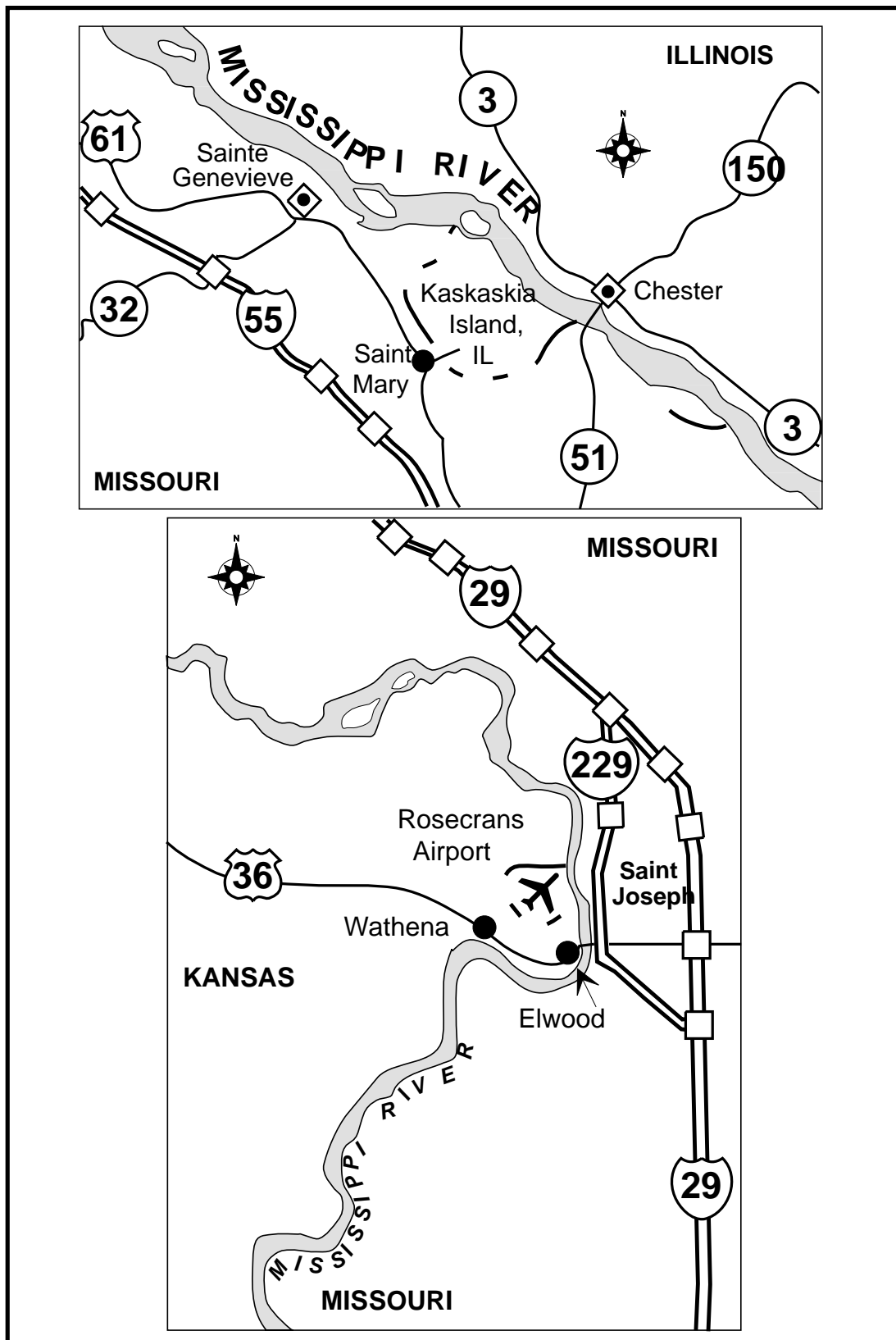


Figure 20. A. - Kaskaskia Island, Illinois, on the Missouri side of the Mississippi River, and B. - Rosecrans Airport, St. Joseph, Missouri, on the Kansas side of the Missouri River. Source: Missouri State Highway Map.

Some examples of avulsions in Missouri include Kaskaskia Island, Illinois, located on the Missouri side of the Mississippi River near St. Mary in Ste. Genevieve County, and Rosecrans Airport, St. Joseph, Missouri, located on the Kansas side of the Missouri River near Elwood, Kansas. The latter avulsion occurred in the Missouri River Flood of April, 1952. (See Figure 20.)

⁴⁰ "Lakeshore" rights, the equivalent of riparian rights for those whose land borders a lake, rather than a watercourse—*Black's Law Dictionary*, 1990.

SUBMERGED LANDS

Individual ownership of submerged lands, such as streambeds and lakebeds, is addressed in case law. Property lines typically are determined by land ownership as defined by common law. Navigability of the stream is a critical determining factor of streambed ownership. The case laws cited provide an overview of the judicial holdings on this subject. Individual property boundary lines sometimes follow county boundaries. The Missouri statute that addresses the matter of county boundaries, as determined by watercourses, is Section 46.010, RSMo: "Whenever a county is bounded by a watercourse, it shall be construed to be the middle of the main channel thereof; and range, township and sectional lines shall be construed as conforming to the established surveys." (See Figure 13.)

Case Law—Lakes

In Missouri, there are natural ox-bow lakes, but most other lakes are actually reservoirs of one kind or another, ranging from small farm ponds to very large Corps of Engineers reservoirs. Man-made reservoirs generally consist of a dam constructed across a main feeder stream. The reservoir area of a constructed lake typically floods the waterway and low lying areas adjacent to the watercourse. Property lines based on the thread of the stream would, when a lake is impounded over those property lines, remain, and title to the new lake beds are as before they became lakes.

In *Kirkpatrick v. The Yates Ice Co.*, 45 Mo. App. 335 (K.C. App. 1891) the court held that on unnavigable lakes, each riparian owns to the center of the lake unless title to the lake bed has been separately identified as though it were dry land. This case involved Bean Lake in Platte County, declared non-navigable in law by the court. The court held that "where lakes have been surveyed and 'sectionized' by the general government, the abutting owner's boundary would be confined to the literal terms of his deed." Title to the water's edge, the court said, "applies only to the great lakes [*sic*]."

With regard to impounded waters, the courts held, in the case of *Bradley v. County of Jackson*, 347 S.W.2d 683 (1961) that "riparian rights arise from ownership of land abutting water. Owners of property which abut an artificial lake acquire littoral rights⁴⁰ to lake use for recreational and domestic purposes. Riparian rights arise from ownership of land abutting water and are incident of such ownership of 'upland' regardless of ownership of submerged lands. Easements

⁴¹ "an instrument in writing which conveys an interest in land from the grantor to the grantee; [an] instrument used to effect a transfer of realty; [its] main function is to pass a title (or right to possess) to land" -Gifis.

⁴² *Cooley v. Golden*, 117 Mo. 33, 23 S.W. 100 (1893).

and conveyance of right-of-ways [sic] by owners to others, whose purpose is construction of an artificial lake, does not preclude use and enjoyment of the lake by owners whose property abuts the water's edge."

Case Law— Rivers and Streams

Typically, a property line is where it has been surveyed and legally identified on the deed⁴¹ to the land. Lacking a more definitive description, on nonnavigable rivers, usually the riparian property line is the center of the streambed (a line beneath the "thread of the stream"). On the larger rivers that are deemed navigable, the property line is the low water mark, with ownership of the streambed vested in the state or the county. Landowners adjacent to a navigable stream do not have ownership rights which extend to the middle of the stream, but rather only to the water's edge.⁴²

Hobart-Lee Tie Co. v. Grabner, 206 Mo. App. 96, 219 S.W. 975 (1920) concerned non-navigable waters, and ownership of stream bed. "If a stream is non-navigable in the sense that the state or government has not the title to the river bed, then the adjoining landowners' property ownership runs to the thread of the stream and such ownership is subservient only to the rights of the public to use the stream as a highway. In a case where land is patented to a riparian owner by the government, and part of it is washed away and it is afterwards restored by accretion, the riparian owner acquires the title thereto. The right to use a stream as a highway for floating logs, the adjoining owners' ownership running to the thread of the stream, did not include the right to land and haul logs or ties over the land of a riparian owner to a highway."

In the case of *Conran v. Girvin*, 341 S.W.2d 75 (Mo. En Banc 1961) the court held that "riparians have the same rights in navigable waters as they do in non-navigable waters with respect to stream bed and ownership use to the low water level which abuts their lands. Title to the beds of navigable streams is in the respective states, unless granted away, [and are] subject only to the reservation and stipulation that such streams shall forever be and remain public highways, with the right of Congress to regulate commerce on them. A state may determine to what extent a riparian proprietor will be given rights over lands under navigable waters. A riparian proprietor in the state has title to the shores of navigable streams down to the low-water mark, and thus the property line between a riparian owner on a navigable stream and the state is the low-water mark subject to certain rights in the public to navigation. 'Mean low water' in a navigable stream is approximately the middle point between the upper and lower extremes of low water. Title of a riparian owner extends to the low-water mark, in view of the fact that a riparian owner is entitled to have access to the waters. Accretion is the gradual increase of riparian land causing what before was covered by water to become dry land."

Utah v. United States, 403 U.S. 9 (1971) is a federal case which produced the "equal footing" rule: Ownership of stream beds origi-

nally located in U.S. territories passed to the state upon its admission to the union.

INTERSTATE WATERS

Streams flow across individually owned property boundaries, and as a result, are utilized pursuant to state law according to the needs of the riparian land owners. In much the same way, interstate rivers flow across state jurisdictional boundaries and are utilized pursuant to federal law, and when not in conflict with federal law, state law. The White River is an example of a river that flows back and forth across state boundaries. The Missouri River flows through or forms the boundaries of seven states. The state of Missouri is the farthest downstream Missouri River state, as the Missouri River empties into the Mississippi River just north of St. Louis. The portion of the Mississippi River, from its headwaters in Minnesota to its confluence with the Ohio River, just south of Cape Girardeau, is known as the Upper Mississippi River and flows through or forms the boundaries of five states. The Lower Mississippi River begins at its confluence with the Ohio River and empties into the Gulf of Mexico, south of New Orleans, crossing or forming the boundaries of seven states. The southwest corner of Missouri drains west into Oklahoma and south into Arkansas to the Arkansas River, and the south central part of the state drains south into Arkansas to the White River. The western boundary of the "Bootheel" area of Missouri with Arkansas is formed by the St. Francis River. Numerous small rivers and streams flow from Iowa, Kansas and Arkansas into Missouri and from Missouri into Kansas, Oklahoma and Arkansas. Missouri is upstream to six other states and downstream to eleven states.⁴³

As a result of its location as both an upstream and downstream state, Missouri has certain rights and expectations as well as responsibilities pertaining to interstate water quantity and quality. As watercourses cross state lines, their waters are subject to different jurisdictional laws concerning their use and management. A legal use of stream water in one state may not necessarily be legal in another state only a few feet up or down stream. Certain federal laws apply to interstate rivers regardless of state boundaries. Much of the law dealing with interstate water is focused upon commerce and water quality of rivers and streams. This section addresses the rights, responsibilities and jurisdictional authority of states and the federal government pertaining to interstate water.⁴⁴

Statutory Law

The Missouri and the Mississippi are the two major rivers of Missouri. Since these both are navigable waterways, employed in interstate commerce, there are numerous federal laws dealing with them. On the state level, Section 26.130 authorizes the governor to design-

⁴³ Vineyard, *Water Resource Sharing*, pp. 1-2 and 9.

⁴⁴ For additional information on this topic please refer to Instream Uses and to *Water Resources Sharing- The Realities of Interstate Rivers*, State Water Plan Volume VI, Water Resources Report Number 50, 1997.

nate a state agency to negotiate with federal agencies in regard to federal projects. Where these projects primarily concern flood control and navigation, the primary agency to lead this function is the Department of Transportation (MoDOT).

The White River

An example of an interstate river that does not form a boundary, but rather crosses and recrosses the boundary of Missouri, is the White River, which rises in northwestern Arkansas, and winds its way northward, eastward, and southward on its way to the Lower Mississippi River. On its way, the White River is dammed several times. A dam west of Eureka Springs, Ark., impounds the waters to form Beaver Lake. Another dam west of Branson, Mo., forms the impoundment known as Table Rock Lake, part of which extends across the state line into Arkansas. Downstream (east) of there, near Forsyth, Mo., a small run-of-the-river hydroelectric power dam makes the White River into a stillwater called Lake Taneycomo. Farther downstream, a dam at Bull Shoals, Ark., creates a reservoir called Bull Shoals Lake, part of which extends across the state line into Missouri. All of these dams were built with hydroelectric power generators. The major uses of these lakes are for water recreation and power generation. Below the lakes are coldwater fisheries, where anglers catch trout. Because of the way water is released from these major reservoirs, low levels of dissolved oxygen in the water has been a problem (fish require certain levels of dissolved oxygen to breathe) that has been the sub-

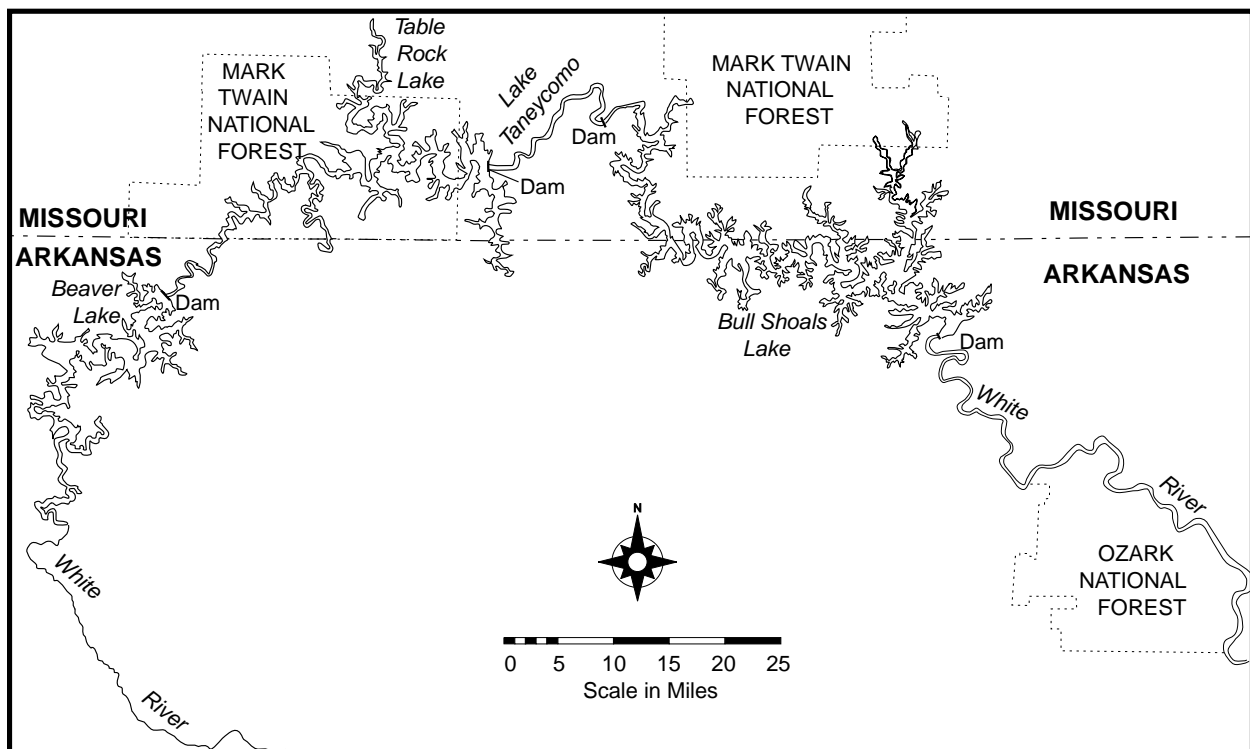


Figure 21. The White River, an interstate river. Source: Missouri and Arkansas State Highway Maps.

ject of numerous interstate meetings and discussions. (See Figure 21, The White River.)

Case Law

Pursuant to the U.S. Constitution, the federal government has the power to regulate the commercial use of navigable waters of the United States. Waters subject to federal navigation jurisdiction include: 1) waters which are presently used for commercial navigation in interstate waterborne commerce, 2) waters historically used (such as by fur traders in canoes, by keelboats, or by sawlogs floated to market) for commerce, and 3) waters which are "susceptible of navigation" and can be made navigable by feasible improvements at reasonable cost. The mere ability of the watercourse to float recreational boats does not, in and of itself, establish federal navigability for federal regulatory purposes.⁴⁵

Federal navigational jurisdiction in navigable waterways extends to the ordinary high water mark of the stream, excluding overflow waters which top adjacent banks and flood surrounding lands. Federal navigational jurisdiction includes the authority to regulate the permanent anchoring of vessels to the beds of navigable streams, the authority to regulate access to a federally navigable waterway, the authority to regulate structures in the federally navigable watercourse, and the authority to require permits for fills and structures in the navigable waterway which extend into the stream beyond the ordinary high water mark.⁴⁶

Missouri, under state common law, recognizes the rights of access, mooring, and "wharfing out" of riparian landowners whose property abuts the navigable waterway, however these rights cannot unreasonably interfere with the same rights held by other riparians or the public's right of navigation. Missouri riparian landowners cannot construct piers beyond the ordinary low water mark on navigable streams. The public does not have the right to cross private land to gain access to a public waterway, as in doing so, a private trespass would be committed. State and state sanctioned governmental entities may acquire access to public waters across private property by purchase of easement or by condemnation and subsequent payment for "takings."⁴⁷ The following cases focus on the rights and restrictions attendant to commerce and navigation, and the rights and expectations pertaining to use of interstate flows.

Federal Navigation

The foundations of all law dealing with commerce, navigation, and interstate water are based on the Commerce Clause, Article I, Section 8, Paragraph 3 of the United States Constitution, "The Congress shall have power . . . to regulate commerce with foreign nations, and among the several States, and with the Indian tribes."

The linkage of navigation to commerce is found in the case of *Gibbons v. Ogden*, 22 U.S. 1 (1824) where U.S. Supreme Court Chief Justice Marshall wrote, "all America understands, and has uniformly

⁴⁵ Davis, "Recreational Use of Watercourses," p. 76.

⁴⁶ Davis, "Recreational Use of Watercourses," p. 77.

⁴⁷ Davis, "Recreational Use of Watercourses," pp. 78-80.

⁴⁸ United States Constitution, Art. III, §2, ¶1: "The judicial power shall extend to all cases, in law and equity, arising under this Constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to controversies to which the United States shall be a party; to controversies between two or more states, between a State and citizens of another State, between citizens of different states.."

understood, the word commerce to comprehend navigation . . . and a power to regulate navigation is as expressly granted as if that term had been added to the word commerce. If commerce does not include navigation, the government of the Union has no direct power over that subject . . ."

Over the years many cases have addressed various aspects of interstate water and the associated rights of individuals and states. Due to its very nature, interstate water cases are heard in the federal court system rather than at the state court level.⁴⁸ For purposes of comprehensiveness, the topics of commerce and navigation will be discussed concurrently with interstate water.

Another early federal case addressing the Constitutionally defined areas of commerce, navigation and state police powers was *Wilson v. Black Bird Creek Marsh Co.*, 27 U.S. (2 Pet.) 105 (1829). "In the absence of conflicting legislation by Congress," wrote the court, "there is a residuum of power held by the state to make laws governing matters of local concern which nevertheless in some instances may affect interstate commerce or even to some extent regulate it. States may regulate matters of local concern, if local in character and effect, and its impact on interstate commerce does not seriously interfere with its operation and the consequent incentive to deal with them nationally is slight. Such state statutes have been generally held to be within the purview of state statutory authority."

In *Gilman v. Philadelphia*, 70 U.S. (3 Wall.) 713 (1865) the Supreme Court addressed "navigational servitude" and federal power to restrain interference with navigation. The court held that "the power to regulate commerce comprehends the control for that purpose, and to the extent necessary, of all the navigable waters of the U.S. which are accessible from a state other than those on which they lie; and includes, necessarily, the power to keep them open and free from any obstruction to their navigation, imposed by the states or otherwise. It is for Congress to determine when its full power shall be brought into activity, and as to the regulations and sanctions which shall be provided. Congress may impose whatever it shall deem necessary, by either general or special laws. It may regulate all bridges over navigable waters, remove offending bridges, and punish those who shall thereafter erect them."

Gibson v. United States, 166 U.S. 269 (1897) dealt with the riparian owner's right of access to a watercourse. "Riparian ownership on navigable waters is subject to the obligation to suffer the consequences of an improvement of the navigation, under an act of Congress, passed in the exercise of the dominant right of the government in that regard," wrote the court.

The court addressed congressional commerce clause powers and state regulatory powers in the case of *F.P.C. v. Oregon*, 349 U.S. 435 (1955) stating that "the commerce clause of the U.S. Constitution supersedes state regulatory authority."

The case of *F.P.C. v. Union Elec. Co.*, 381 U.S. 90 (1965) dealt with federal licensing authority on nonnavigable tributaries where navigation would be affected on the navigable main channel. Here,

the court held that, "the Commerce power of Congress encompasses the interstate transmission of electricity without regard to federal control of tributary streams and navigation. The language invokes full Congressional authority over commerce, not merely the regulation of navigation or water commerce."

Navigation and federal licensing authority were addressed by the court in *United States v. Appalachian Elec. Power Co.*, 311 U.S. 377 (1940). The court held that, "in determining the navigability of a river, the federal government, through the powers of the commerce clause, may properly consider the feasibility of interstate use after reasonable improvements are made to the character of the river, such as a dam, and thereby render a previously unnavigable waterway navigable."

The court dealt with questions of navigational servitude and federal power to restrain interference with navigation in *United States v. Combs*, 37 U.S. (12 Pet.) 72 (1838). "Pursuant to the Commerce Clause, Congress possesses the power to punish offences. The power to regulate commerce includes the power to regulate navigation as connected with the commerce with foreign nations and among the several states. It does not stop at the mere boundary line of a state, nor is it confined to acts done on the waters, or in the necessary course of navigation thereof. It extends to such acts done on land which interfere with, obstruct, or prevent the due exercise of the power to regulate commerce and navigation with foreign nations and among the states. Any offense which thus interferes, obstructs, or prevents such commerce and navigation, though done on land, may be punished by Congress, under its general authority to make all laws necessary and proper to execute their delegated constitutional powers."

State Navigational Jurisdiction

Distinguished from federal navigation, state navigation rights are deemed to be, "the public right to use streams capable of floating recreational boats."⁴⁹ However, "the state public right of navigation does not extend to those streams which are rendered floatable only by an artificial means and can only be reached with effort through a 'tortuous course'."⁵⁰ The Missouri River was specifically acknowledged by the Missouri Supreme Court as a navigable stream in 1875.⁵¹

In *Slovensky v. O'Reilly*, 233 S.W. 478 (Mo. 1921) a Missouri court affirmed its concurrence with the federal navigability test of a river, "as stated by the Supreme Court of the United States, is that those rivers are navigable in law when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. Another test is whether, in its ordinary state, a stream or body of water has capacity and suitability for the usual purpose of navigation, ascending or descending, by vessels such as are employed in the ordinary purposes of commerce, whether foreign or inland, and whether steam or sail vessels."

⁴⁹ *City of Springfield v. Mecum*, 320 S.W.2d 742 (1959).

⁵⁰ *Sneed v. Weber*, 307 S.W.2d 681 (1958).

⁵¹ *Benson v. Morrow*, 61 Mo. 345 (1875).

The case of *Elder v. Delcour*, 364 Mo. 835, 269 S.W.2d 17, 263 S.W.2d 221, 241 Mo. App. 839 (MoSC 1954) addressed landowner and public rights in riparian streams, right of the public to navigate upon water-courses, and public rights to floatable streams. The Missouri Supreme Court held that, "waters of navigable streams are 'public highways' and the submerged area of a stream channel which crosses private property may be accessed by the public for purposes of travel by floating or wading, for business or pleasure." (See Figure 3.)

Four years following, the case of *Sneed v. Weber*, 307 S.W.2d 681 (St.L. Mo. App. 1958) relied upon the holding in *Elder* and further defined state navigable streams. The court held that "the rule to be applied in this state in determining whether or not a body of water is navigable is to be found in the case of *Elder v. Delcour*. To be navigable under the Missouri rule, the stream must be capable of floating vessels or boats as are used in the customary modes of travel in pursuit of commerce. A stream is not navigable simply because a small boat may be navigated through a tortuous course. To be navigable, a stream must be navigable in its natural state, unaided by artificial means or devices; waters which may be made floatable only by artificial means are not regarded as navigable or as public highways."

A year later, the Springfield Appellate Court, in the case of *City of Springfield v. Mecum*, 320 S.W.2d 742 (Spr. Mo. App. 1959) pronounced that "public navigation extends to water's edge." In this case the city had constructed a dam and impounded waters of a state navigable river into an artificially created lake. Prior to the creation of the dam the waters of the river were public waters, the submerged area of its channel was a public highway for travel and passage by boating and wading and available to the public by unrestricted lawful means. Subsequent to the construction of the dam and the impoundment of waters forming the lake, the city passed an ordinance limiting maximum horsepower of boat motors allowed on the lake. The court found that the city acted reasonably and within its police powers. The court also held that, "owners of land adjacent to the lake can not prevent the public from utilizing its recreational interests attached to the water up to the water's edge, regardless of the location of the original watercourse."

Rights and Expectations Pertaining to Interstate Flows - State Relations

Not entirely unlike individual riparian landowners, states possess certain rights, expectations and obligations in the flow of streams and rivers that cross state lines. Since each state is sovereign, and laws differ from state to state, conflicts over rights to interstate stream flows can arise. As provided for in the U.S. Constitution, suits between states is within the original jurisdiction of the U.S. Supreme Court.

In the 1898 case of *Green Bay & Miss. Canal Co. v. Patten Paper Co.*, 172 U.S. 58, the Supreme Court ruled that federal jurisdiction preempts conflicting state water rights statutes.

The case of *Missouri v. Illinois*, 180 U.S. 208 (1900) confirmed that the U.S. Supreme Court is the court of original jurisdiction in cases between the states where issues address federal common law as it pertains to water pollution of the Mississippi River at St. Louis by discharges into the Illinois River by the City of Chicago. The court held that, "the discharges could affect the health and property of the citizens of Missouri, whom the State rightfully represents, as well as their interests."⁵²

In *Sanitary District of Chicago et al. v. United States*, 266 U.S. 405 (1925) the Supreme Court of the United States affirmed an injunction, by a lower court, against the Sanitary District. The case involved the denial of a permit by the U.S. Army, Corps of Engineers, for the Chicago Sanitary District to withdraw (divert) more than 4,167 cubic feet per second (cfs) of water from Lake Michigan (Great Lakes Watershed) through the Chicago Sanitary and Ship Canal into the Illinois River (Mississippi River Watershed). The court held that the Canadian Boundary Waters Treaty of January 11, 1909, forbade any diversion greater than that amount. Mr. Justice Oliver Wendell Holmes wrote, "This is not a controversy between equals. The United States is asserting its sovereign power to ... control the navigable waters within its jurisdiction ... [and] carry out treaty obligations to a foreign power. In matters where the national importance is imminent and direct, even where Congress has been silent, the States

⁵² This is the earliest case involving the Chicago Sanitary & Ship Canal, joining Lake Michigan and a tributary of the Illinois River, the Des Plaines River. Involved in this case is an inter-basin transfer of water, as well as water pollution issues.

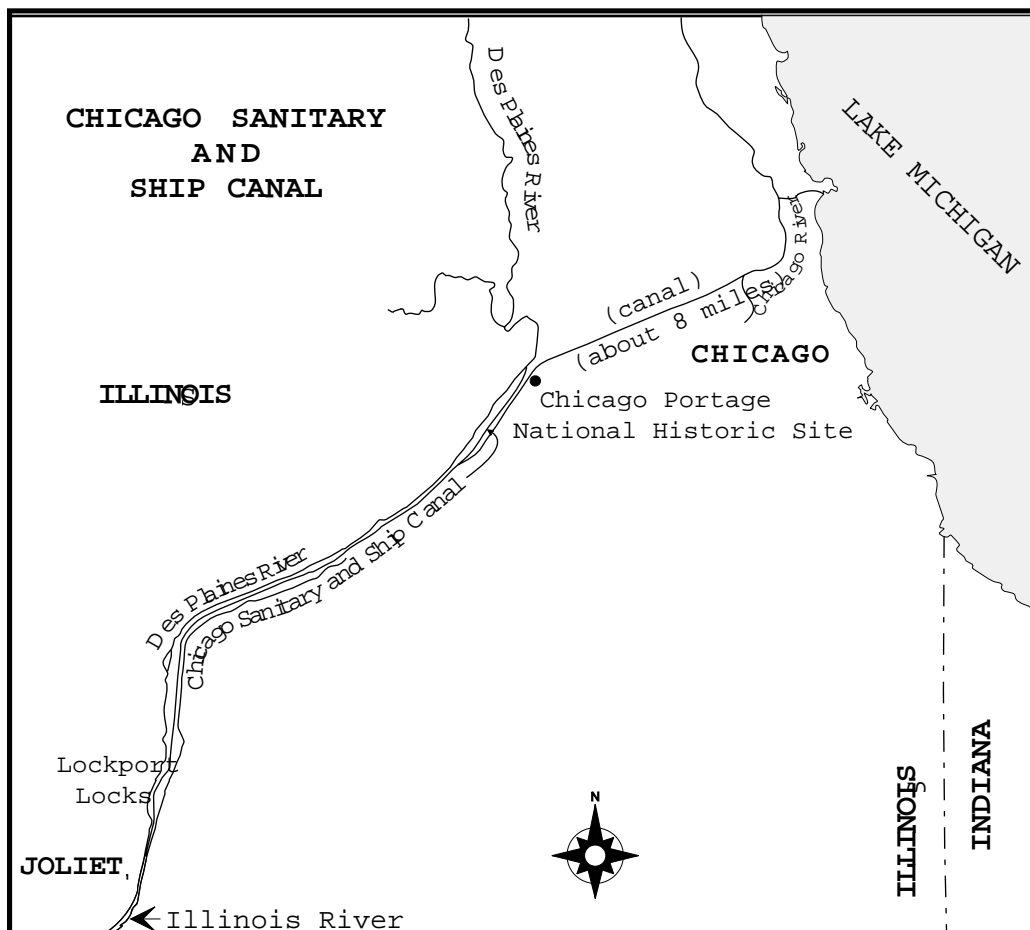


Figure 22. Location of the Chicago Sanitary and Ship Canal, Ill., connecting Lake Michigan and the Illinois River, a tributary of the Mississippi River. Source: Illinois State Highway Map.

may not act at all." [This is the second of several cases involving the Sanitary Canal.] (See Figure 22, Map.)

The case of *New Jersey v. New York*, 283 U.S. 336 (1931) dealt with interstate water rights and limitations on state laws. The state of New Jersey sued the state of New York and city of New York to enjoin them from diverting water from non-navigable tributaries of the Delaware River for the purpose of increasing the water supply for the city. The court held that, "this case can not be governed by a strict application of common law of private riparian rights but rather by the principle of equitable apportionment applicable between states. The fact that the diversion is from one watershed to another is not a hindrance. Provided that the navigability requirement is met, the diversion is reasonably necessary to New York and does not materially affect the Delaware River and its uses in sanitation, industry, agriculture, a source of municipal water supply or its fisheries. The diversion does not constitute a prior appropriation or give the state of New York or the city of New York any superiority of right over the state of New Jersey or the commonwealth of Pennsylvania in the enjoyment and use of the river and its tributaries."

Interstate flows between riparian states were addressed in *Connecticut v. Massachusetts*, 282 U.S. 660 (1931). The court found that, "the determination of the private individual relative rights by the federal courts when relief is sought by contending states on behalf of its citizens is not dependent upon the same considerations, and is not governed by the same rules of law that apply in such states which are governed by prior appropriation rules. Such disputes are to be settled on the basis of equality of right, but it does not follow that there must be an equal division of the waters of an interstate stream among the States through which it flows. The principles of right and equity shall be applied with regard to the equal level on which States stand under the Constitution. Municipal laws relating to like questions between individuals does not have controlling weight."

The case of *Wyoming v. Colorado*, 286 U.S. 494 (1932) involved interstate water rights and water diversions, and because it was a suit between two states, the U.S. Supreme Court was the trial court. (There had been two earlier suits, 259 U.S. 419, 496; and 260 U.S. 1.) Both states are "prior appropriation" states, and "doctrine of appropriation for beneficial use" applies to both. The court held that "priority of appropriation gives superiority of right, which furnished the only equitable and right basis on which to determine the controversy between the two states; at issue was an earlier decree which allowed each state certain amounts of water from the interstate Laramie River. The sovereign states acted on behalf of their citizens who are bound by the earlier decree on maximum appropriations from the river, which was violated by the State of Colorado to the damage of Wyoming water users."

The Supreme Court addressed interstate water appropriation in the 1945 case of *Nebraska v. Wyoming*, 325 U.S. 589. When determining whether one State is using or threatening to use more than its

equitable share of benefits of a stream, all the factors which create equities in favor of one State or the other must be weighed in the determination of the controversy. Strict adherence to the priority rule of water appropriations may not always be possible and may call for the exercise of informed judgement on a consideration of many factors, priority of appropriation being the guiding principle.

In *First Iowa Hydro-Elec. Coop., v. F.P.C.*, 328 U.S. 152 (1946), the Supreme Court addressed federal regulatory powers. "Under the authority of the U.S. Constitution, the authority of the United States to govern interstate commerce, the Congress is authorized to make rules preempting state law, a power which is wholly independent of the question of private ownership. A federal agency which is authorized by congress to develop hydroelectric projects on waters subject to the commerce power does not have to submit to state rules and regulations as to how the water should be used."

The case of *Arizona v. California*, 373 U.S. 546 (1963), addressed interstate water rights, instream flows, and interstate water compacts. The Supreme Court upheld the "authority of Congress to allocate or apportion interstate surface water flows between basin states. Lower basin states are entitled to a certain portion of anticipated natural flows." The Court also held that, "Congress delegated to the Secretary of the Interior the power and authority to distribute the allocated water to individual users and is not bound by state statutes or laws governing water distribution or allocation."

Hackensack Water Co. v. Nyack, 289 F. Supp. 671 (S.D.N.Y. 1968), dealt with interstate water and individual riparian rights. "Under both New Jersey and New York common law, upstream riparian owner may not unreasonably divert or appropriate waters of flowing streams, riparian owners must restore all flowing waters to stream subject only to reasonable allowance for domestic use and consumption. 'Diversion', as applied to watercourses, is the taking of water from a stream without returning it for the use of lower riparian owners. Owner contiguous to natural watercourse may withdraw water from the watercourse for agricultural, industrial or other uses on his land provided he returns it in substantial volume to the watercourse stream. All proprietors of a stream have an equal right to use water and share in the benefits gained from such use. Artificially increased flow of stream is factor which must be considered when determining whether upstream owner's use is reasonable. Grant by New York to divert water without making compensation to lower riparian owner (N.J. water company) is an unconstitutional taking of lower riparian owner's property."

In *Illinois v. City of Milwaukee*, 406 U.S. 91 (1972), which dealt with federal common law and water pollution, the court held that pollution of interstate navigable waters by a political subdivision of another state is actionable under the laws of the United States. Federal common law applies to air and water in their ambient or interstate aspects. The application of federal common law to abate the pollution on interstate or navigable waters is not inconsistent with federal enforcement powers. While state environmental quality stan-

⁵³ The previous case on this issue, which led to this action, was *Sanitary District v. United States*, 266 U.S. 405 (1925).

dards and federal environmental protection statutes may be relevant but not conclusive sources of federal common law, they do not necessarily form the outer limits of such law.

The case of *Texas v. New Mexico*, 462 U.S. 554 (1983), addressed the fulfillment of obligations under an interstate water compact. Texas and New Mexico, upon Congressional approval, entered into the Pecos River Compact to govern the allocation of waters of the Pecos River. The Pecos River flows from New Mexico into Texas. The compact required that New Mexico not deplete, by human activities, the flow of the river at the Texas - New Mexico state boundary below an amount equivalent to 1947 conditions. The compact also established a 3-member commission, two of which were voting members. The voting members were unable to reach an agreement to determine shortfalls in the river's flow and Texas filed action against New Mexico in the U.S. Supreme Court alleging that New Mexico had breached its obligations under the terms of the interstate compact. The court appointed a Special Master to evaluate the facts of the case. The Supreme Court held that, "once Congressional consent is given to an interstate compact as required by the Compact Clause, the compact is transformed into a law of the United States and unless the compact is unconstitutional, no court may order relief inconsistent with its expressed terms."

Rights and Expectations Pertaining to Interstate Flows: The Wisconsin Cases

As can be clearly seen from the cases immediately following, the U.S. Supreme Court, as well as affected states, hold interstate water rights in a place of paramount importance. Beginning with the 1929 case of *Wisconsin v. Illinois*, 278 U.S. 367, a series of cases were brought to the federal court system to address interstate water diversion.⁵³ A group of states led by the State of Wisconsin sued the State of Illinois and the Sanitary District of Chicago *et al.* to enjoin the sanitary district from diverting additional water from Lake Michigan through a sanitary canal into another watershed as allowed by a permit from the Army Corps of Engineers. The States of Michigan and New York joined Wisconsin. The States of Missouri, Kentucky, Tennessee, and Louisiana, later joined by Mississippi and Arkansas, intervened to dismiss the case, which the court denied. The court appointed a Special Master to take evidence and make a report. The pleading by the State of New York attached riparian rights to the waters of the Great Lakes-St. Lawrence Waterway under the common law, and the Canadian Boundary Waters Treaty of 1909. New York argued that the "Great Lake States" own the land under the Great Lakes and the St. Lawrence Waterway and cited precedent to support its position. The defendants argued that there was no servitude to a lower state to permit the water to flow down unimpaired in quantity and that running water is not subject to ownership, also citing precedent. In its verdict, the court did not rule on the superfluous pleadings of the joining states, but rather directed its comments to the cause

of the original action. The court confirmed that the permit of 1925 was the authority for maintenance of the diversion, and noted that in increasing the diversion, the Sanitary District had defied the terms of the Corps permit. The court held that the Sanitary District authorities "have much too long delayed the needed substitution of suitable sewage treatment plants" (for the flushing action provided by water diversion). The case was referred to the Special Master to prepare suitable conclusions and a decree (281 U.S. 179).

This case was followed a year later by *Wisconsin v. Illinois*, 281 U.S. 179 (1930) decision *per curiam* (by the court). Based upon the report of the Special Master, the Court determined the amounts by which the unlawful diversion of water from Lake Michigan should be diminished incrementally, and dates set for each step. The Court rejected the plaintiffs' demands "that all diversion through the Drainage Canal cease..." and adopted as more reasonable the Master's report that... "an outflow into the Des Plaines River (tributary to the Illinois River) should be permitted and that the interests of navigation in the Chicago River...will require the diversion of an annual average not exceeding 1,500 cfs." The same year also saw *Wisconsin v. Illinois*, 281 U.S. 696 (1930). The Court issued its decree governing the amount of water which might be diverted from Lake Michigan through the Chicago Sanitary and Ship Canal into the Illinois River. The Court retained jurisdiction for the purpose of any future modification of this decree...which it may deem to be proper. [The following cases result from this retained jurisdiction.] (Refer back to Figure 22, Map.)

Three years following, in *Wisconsin v. Illinois*, 288 U.S. 587 (1933) Missouri and other states applied to the court for a modification of the decree of April 21, 1930 (281 U.S. 696). That application was denied, January 16, 1933. Also in 1933, in *Wisconsin v. Illinois*, 289 U.S. 395, following a hearing on the Report of the Special Master, relative to several points raised, the Court enlarged the decree of April 21, 1930. The former Special Master, Charles Evans Hughes, had become the Chief Justice of the Supreme Court by this time, and he delivered the opinion of the Court. The hearing focused on the evident delay of the Sanitary District in obtaining Corps of Engineers approval of the plans for carrying out the terms of the earlier Court decree, and the delay in construction. The Master's report noted the "inexcusable failure of the defendants to make an application...for such approval" and the "inexcusable and planned postponement of the beginning of construction...and the failure to proceed to a definite decision as to a site and...the acquisition of the site...and the failure to... prepare plans and specifications...for the Works." The Master's Report also noted that, "because of its financial situation, the...District is at present powerless to contract for the design and construction...of the sewage treatment works due to the unmarketability of its bonds...unless the State of Illinois meets its responsibility and provides the money." The Court held that the State of Illinois is the primary and responsible defendant...with full liability

⁵⁴ Background note: This time period is that of the Great Depression in the U.S. (and world) economy.

⁵⁵ Background note: This time period is that of a severe drought in the Midwestern and Western United States.

for the acts of its instrumentality, the Sanitary District of Chicago. The Court also held that the Rivers and Harbors Act of July 3, 1930, did not conflict with the terms of the decree. Notably, when its authority was questioned by the defendants, the Court held that "the authority of the Court to enjoin...necessarily embraces the authority to require measures to be taken..." to comply with the Court decree. The Court then enlarged the decree, stating, "It appearing that the Sanitary District can not construct the necessary sewage disposal works in time, for want of financial resources, the decree is enlarged to prescribe in terms: That the State of Illinois is hereby required to take all necessary steps, including whatever authorizations or requirements, ..." in order to carry out this decree, and before October 2, 1933, the State was to report to the Court its action in compliance with this provision.⁵⁴

The action continued some years later with *Wisconsin v. Illinois*, 352 U.S. 945 (1956) decision *per curiam*. The Court was petitioned, and responded, "In view of the emergency in navigation caused by low water in the Mississippi River," the court decree of April 21, 1930, was temporarily modified to permit an average diversion of 8,500 cfs "as the Corps of Engineers, United States Army, shall determine will be useful in alleviating the emergency.." until 31 January, 1957. After that date, the 1930 decree would be in force.⁵⁵

The court held in *Wisconsin v. Illinois*, 352 U.S. 947 (1956) decision *per curiam*, a motion by the Sanitary District of Chicago for clarification of the decree [281 U.S. 696 (1930)] was denied.

This was followed by *Wisconsin v. Illinois*, 352 U.S. 983 (1957) decision *per curiam*. In view of the continuing emergency in navigation caused by low water in the Mississippi River, the court decree of April 21, 1930 [281 U.S. 696] was further temporarily modified to permit the diversion of not exceeding 8,500 cfs of water from the Great Lakes-St. Lawrence system into the Illinois Waterway as the Corps of Engineers, U.S. Army, should determine would be useful in alleviating the emergency. After 28 February, 1957, the decree of 1930 was to be in force.

A decade later, *Wisconsin v. Illinois*, 388 U.S. 426 (1967) was a further outgrowth of the cases cited immediately above. Joining Wisconsin in this suit were Minnesota, Ohio, Michigan, Pennsylvania, and New York. The court decree enjoined Illinois and its municipalities from diverting any of the waters of Lake Michigan or its watershed into the Illinois Waterway in excess of an average of 3,200 cfs, which is permitted for diversion into the Sanitary and Ship Canal to maintain it in a satisfactory sanitary condition. Measurements made by the State of Illinois agencies were to be under the general supervision and direction of the U.S. Army, Corps of Engineers.

OTHER WATER LAW TOPICS

This chapter covers the water related topics of public safety, atmospheric water, mining and mine reclamation and aquatic plants. Some duplication of information with other chapters may exist, but is necessary in order to provide the needed background for discussion of the topic.

¹ Preamble to the U.S. Constitution and Art. I, §2 of the 1945 Missouri Constitution.

PUBLIC SAFETY

A fundamental basis of the U.S. and Missouri Constitutions is to secure and promote the general welfare of citizens.¹ The section on Water Quality focuses on individual rights and public health. Public safety, related to but not the same as public health, is of concern where water-based recreation and navigation on the rivers is concerned. Public safety also encompasses fire suppression, which commonly relies upon fire hydrants for water supplies. In areas not served by public water supplies, typically the water sources for fire fighting are nearby wells, streams or ponds. Section 293.620, RSMo, mandates cave inspections (commercial caves) for public safety purposes. Some caves are wet, and some are dry. Some have underground streams or lakes. The Cave Resources Act addresses underground water resources protection (see Water Rights). The following addresses the topic of public safety laws related to water use.

Statutory Law—Fire Protection

Chapter 393, RSMo, on public utilities, such as gas, electric, water, heating, and sewer companies (utilities), contains an old Section, 393.130, 5, under Safe and Adequate Service, which makes provision for placement of fire hydrants for fire protection, and how water corporations may determine charges for water. This Section was statutory law prior to 1919.

Fire protection and fire protection districts are governed by Chapters 320 and 321, RSMo, but these mostly detail administrative and financial procedures, rather than fire-fighting techniques. However, Section 320.273, RSMo, sets up a "dry hydrant technical assistance

² As per verbal confirmation from the Missouri Water Patrol Headquarters, June, 1998.

program," in which the State Fire Marshal and the Department of Conservation cooperate to promote the use of "dry hydrants" in rural areas of Missouri. Section 320.273.2 provides the following definition.

"Dry hydrants" are non-pressurized pipes permanently installed in lakes, farm ponds and streams that provide a ready means of drawing water for rural fire departments. A well-designed dry hydrant water delivery system can improve fire fighting capabilities, save fuel, and reduce homeowner insurance premiums.

There were no cases identified that dealt specifically with water for fire protection. Undoubtedly, water for fire protection is a judicially accepted beneficial use because it applies directly to the state's police powers of health, safety and welfare of the citizens. Following this line of reasoning, the courts have not verbally addressed "reasonable use" of water during a crisis situation. One would expect the courts to designate a greater degree of latitude in the interpretation of "reasonable use" of water during a crisis or emergency.

Statutory Law—Swimming Pools

Sections 577.160 and .161, RSMo, define a swimming pool (is for the purpose of public swimming, not a pool at a private residence), and enact certain safety regulations (may not forbid a disabled person to use a life jacket). Sections 537.345 to 537.370, RSMo, address landowner liability for recreational use of land, especially Section 537.348, (3), (b), swimming pools. The law reduces landowner liability for injuries to visitors, especially to trespassers. No cases were identified that dealt specifically with water use for swimming pools.

Statutory Law—State Water Patrol

Section 650.005, 11, RSMo, created the Missouri State Water Patrol in the Department of Public Safety as part of the Reorganization Act of 1974. All the functions of the former Missouri Boat Commission (formerly part of Chapter 306, RSMo) were transferred to the State Water Patrol at that time.

State Water Patrol officers have enforcement powers similar to those of the State Highway Patrol, that is, the powers of a peace officer, to enforce all laws of Missouri on the waterways of the state, and lands adjoining, within 600 feet of the rivers and streams. Major recreational rivers and lakes in the state are patrolled by the State Water Patrol. These include the Missouri River, the Mississippi River, the Osage River, the Gasconade River, the Meramec River, and the Current River; Smithville Reservoir, Longview Lake, Blue Springs Lake, Mark Twain Lake, Thomas Hill Reservoir, part of Bull Shoals Lake, Lake Taneycomo, Table Rock Lake, Stockton Lake, Harry S Truman Reservoir, part of Norfork Lake, Clearwater Lake, Lake Wappapello, Big Lake, Long Branch Lake, Pomme de Terre Lake, and Lake of the Ozarks.²

The State Water Patrol enforces provisions of Chapter 306, RSMo, on watercraft regulation and licensing, including such matters as op-

erating a vessel while intoxicated, the use of personal flotation devices, and vessel regulations such as license numbers and lighting requirements. Also covered in Chapter 306 are, in addition to registration and licensing, water safety regulation, sewage disposal (may not dispose into waters of Missouri), and ownership (titles, liens, encumbrances) of boats and outboard motors.

No relevant cases were identified that specifically addressed the functions of the State Water Patrol.

In-State Recreational Boating and Navigation

The laws applying to in-state recreational boating and navigation are enforced by various state and federal agencies. The chief agencies include the Missouri Water Patrol, Missouri Department of Conservation, Missouri Department of Natural Resources, U.S. Coast Guard, U.S. Fish and Wildlife Service, and the U.S. Army, Corps of Engineers. Chapter 306, RSMo, governs watercraft regulation and licensing, and water safety. Sections 306.020 through 306.060 deal with certificates of title and identification numbers to be placed on vessels. Section 306.090 deals with noise levels from motorboats. Section 306.100 sets out several classifications of vessels, lights to be used while underway, and hazardous conditions that restrict boat usage. Section 306.250 to 306.290 deal with sewage disposal (boats may not dump sewage directly into water) and regulates marine toilets.

Sections 70.115 and 70.325, RSMo, allow local governments to cooperate with federal agencies for development of recreational facilities along rivers or on reservoirs. Section 70.115 is the enabling legislation for cities and counties to develop recreational facilities along rivers where the Corps of Engineers has management authority. An example of federal-local cooperation is the Missouri River waterfront development in Hermann. Section 70.325 is enabling legislation for cities adjacent to federal reservoirs to cooperate with the federal agency to develop recreational facilities.

Individual Rights in Recreational Boating and Navigation³

Recreational navigation is a valid use of riparian streams.⁴ Several rights and restrictions have been identified by Missouri courts with reference to the public's right to use streams and lakes for recreational boating. These public recreational rights include the use of the waters of navigable streams and the submerged area of a stream channel that crosses private property for purposes of travel by floating or wading, for business or pleasure,⁵ but this does not include the use of privately owned lands along the banks of the stream, nor does the public have the right to trespass on private land to access a stream.⁶

For easement of public travel, navigability of a stream extends to the water's edge and expands and contracts as stream level rises and falls.⁷ Public navigation also extends to the water's edge, on the waters of navigable rivers artificially created into lakes. The public has recreational rights in artificially created lakes up to the water's

³ Recreation, recreational boating, navigation, commercial boating and related topics are also discussed in the sections on Water Use and Boundary and Interstate Waters.

⁴ *Burke v. Colley*, 495 S.W.2d 699 (Spr. Mo. App. 1973).

⁵ *Elder v. Delcour*, 364 Mo. 835, 269 S.W.2d 17 (MoSC 1954).

⁶ *Hobart-Lee Tie Co. v. Grabner*, 206 Mo. App. 96, 219 S.W. 975 (1920)

⁷ *Doemel v. Jantz*, 180 Wis. 225, 193 N.W. 393 (1923,) and *Wilbour v. Gallagher*, 77 Wash. 2d 306, 462 P.2d 232 (1969).

⁸ *City of Springfield v. Mecum*, 320 S.W.2d 742 (Spr. Mo. App. 1959).

⁹ *Greisinger v. Klinhardt*, 321 Mo. 186 (1928).

¹⁰ *Sheed v. Weber*, 307 S.W.2d 681 (St.L. Mo. App. 1958) and *Elder v. Delcour*, 364 Mo. 835, 269 S.W.2d 17 (1954).

¹¹ *McKinney v. Northcutt*, 89 S.W. 351 (St.L. App. 1905).

¹² *State ex rel. Citizens' Elec. Lighting & Power Co. v. Longfellow*, 169 Mo. 109, 69 S.W. 374 (1902).

¹³ *Missouri v. Wright*, 201 Mo. App. 92, 208 S.W. 149 (1919).

¹⁴ *Weller v. Missouri Lumber & Mining Co.*, 176 Mo. App. 243, 161 S.W. 853 (Spr. App. 1913).

¹⁵ Select Committee on National Water Resources, United States Senate, "River Forecasting and Hydrometeorological Analysis," in *Water Resources Activities in the United States*, U.S. Government Printing Office, Washington, D.C., November, 1959, page 25: "Fact 9. Precipitation is the basic source of water supply," with further explanation.

¹⁶ Dewsnap and Jensen, p. 1.

¹⁷ Sax, p. 102.

¹⁸ Dewsnap and Jensen, pp. 68-69.

¹⁹ U.S. Water Resources Council, *The Nation's Water Resources 1975-2000*, vol. 2, part 4, p. 25.

edge, regardless of the location of the original watercourse.⁸ Public recreational rights are retained in an artificial lake that is created from a navigable stream.⁹

To be navigable under the Missouri navigational rule, a stream must be capable of floating vessels or boats that are customarily used in travel or commerce, and not simply because a small boat may be navigated through a tortuous course.¹⁰ A riparian landowner does not have the right to obstruct a navigable stream,¹¹ encroach upon or construct in the watercourse so as to impede the public's right of navigation and travel.¹² As riparian landowners are subject to the right of public easement on streams, the public is subject to the rights of riparian landowners that the adjacent soil and streamside property cannot be injured by public in their use of the stream.¹³ Any man-made obstruction that prevents travel on an otherwise navigable stream is a public nuisance and may be abated by judicial action.¹⁴

Many floatable streams in the state have public access points. The public has the right to use public lakes for recreational boating, but likewise not to trespass onto private property at the lake shore. The public does not have the recreational right to use privately owned non-navigable streams or lakes.

ATMOSPHERIC WATER

Atmospheric water (humidity, clouds, fog, rain, snow, sleet, or hail) is one of the sources of the water for Missouri's rivers, streams, ponds, and reservoirs, as well as a source of groundwater for springs and well water.¹⁵ It is the common source of diffused surface water. "Water is a renewable natural resource because nature furnishes a new supply each year in the form of precipitation."¹⁶ Atmospheric water is one stage or form of water in what is termed the hydrologic cycle. (See Figure 23, illustrating the Hydrologic Cycle.)

Precipitation

There are no Missouri statutes or cases which specifically address the topic of precipitation. Rain-making or weather modification is also absent from Missouri law. However, weather modification is a widely discussed and researched technique for augmenting water supplies.¹⁷ Some points concerning weather modification are worth noting. There is no body of law that addresses liability for damages as a result of weather modification activities, there are no rules for regulating weather modification, and there is no method for evaluating its impact upon water supply and water rights.¹⁸ Most of the states west of Missouri have enacted legislation on weather modification.¹⁹ With advances in technology and increased knowledge of the natural environment, coupled with greater demand for this resource, this may become a topic of lawmaking or court decisions in the future.

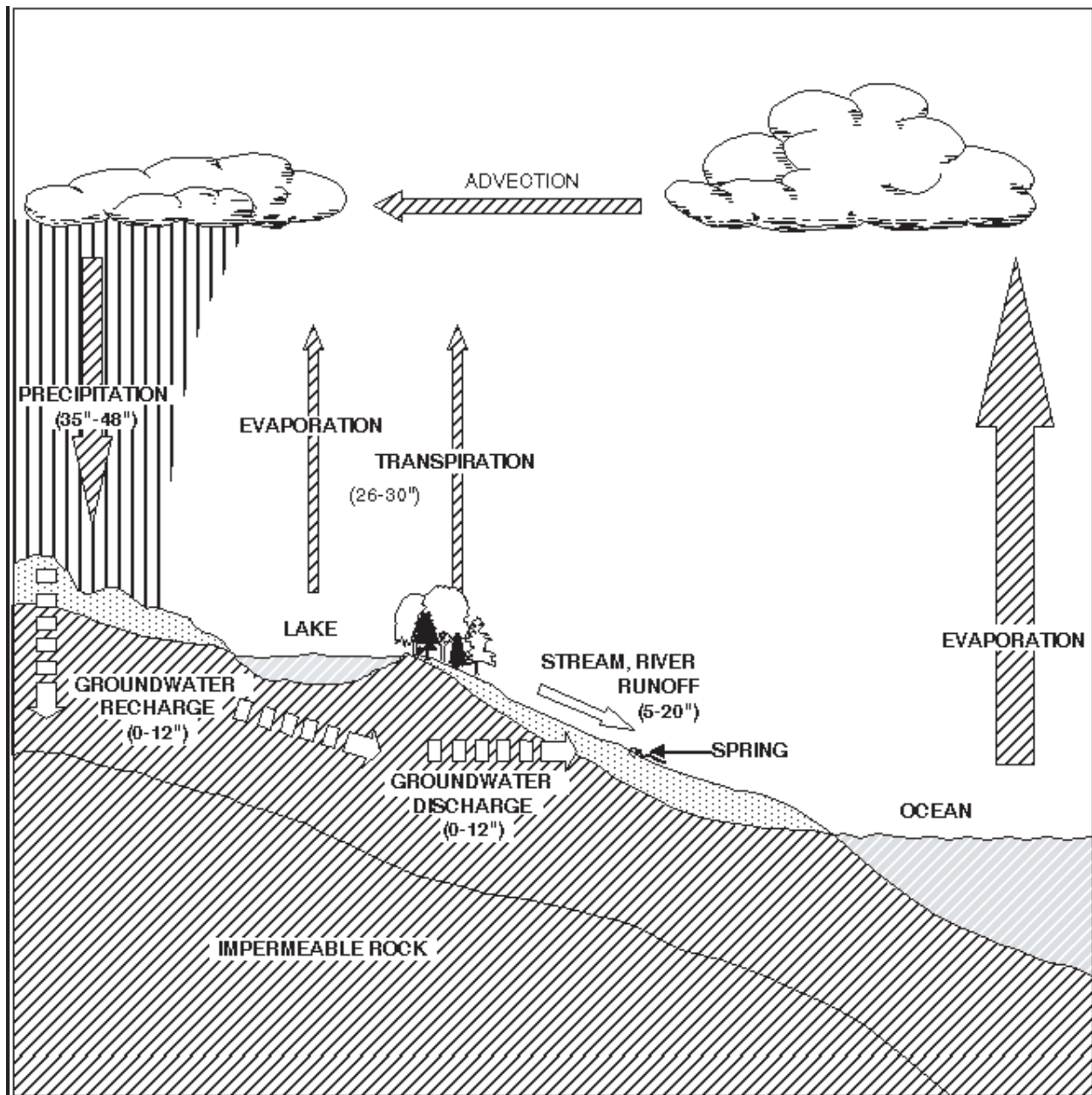


Figure 23. The Hydrologic Cycle. Source: Vandike, James E., *The Surface Water Resources of Missouri*, Missouri State Water Plan Series Volume 1, Water Resources Report No. 45, Rolla, Mo., 1995, p. 14, Figure 4, modified.

Chapter 643, RSMo, is termed the Missouri Air Conservation Law. One of the aims of this statute is the attainment of air quality standards by reducing the amount of pollutants in the air (for example, "SOX," oxides of sulphur, and "NOX," oxides of nitrogen) that react with atmospheric water, producing acidic precipitation, which, in turn, affects the health of forests, prairies, lakes, streams, and groundwater.

²⁰ "A land owner may use his land in any lawful manner for any lawful purpose. . ." *Casanover v. Villanova Realty Co.*, (1948).

²¹ Mining activities as related to drainage and protection are addressed in the section on Protection From Water, and as related to water pollution in the section on Water Quality.

River Forecasts

There are no Missouri laws which specifically address river stage forecasting. This is because the National Weather Service (a federal governmental entity) provides forecasts from River Forecast Centers as an informational service only. For Missouri, these are located at St. Paul, Minnesota, for the Upper Mississippi River; at Slidell, Louisiana, for the Lower Mississippi River; and at Kansas City, Missouri, for the Missouri River.

MINING AND LAND RECLAMATION

Mining and land reclamation are functions of land ownership. As such, the courts have held that the owner of the property has the "right to beneficial use and enjoyment of his property."²⁰ Mineral rights, unlike water rights, can be sold. A landowner ordinarily is entitled to mine his land for minerals, subject of course to any liability for damages that his mining activities may cause to the adjacent property or to its use. The state regulates mining activity based on health, safety, and general welfare, including water quality, land survey, and other relevant reasons.²¹

Statutory Law – General

Chapter 444, RSMo, is entitled, "Rights and Duties of Miners and Mine Owners," and contains general and specific sections. Sections 444.070 - 444.090 pertain to property surveys of mine shafts and drifts, with penalties for refusing to allow land surveys.

Mine Waters

Mine waters are surface or groundwaters which accumulate in open surface mining pits and in underground mine shafts from surface and groundwater sources. Mine waters are susceptible to contamination from mine tailings. Mine waters are dealt with in Chapter 444, RSMo, which covers mining in Missouri. Mining can intercept groundwater flows, change the topography of the land to alter surface water flows, and have other effects. Water is an integral part of the provisions of Chapter 444. Sections 444.800 to 444.970 are called the "Surface Coal Mining Law." In Section 444.800, 2, the General Assembly of Missouri "finds and declares that:"

...(3) Many surface mining operations result in disturbances of surface areas that burden and adversely affect the public welfare by ... contributing to floods, by polluting the water, by destroying fish and wildlife habitats, ... and by counteracting governmental programs and efforts to conserve soil, water, and other natural resources; ...

(4) The expansion of coal mining to meet energy needs makes even more urgent the establishment of appropriate standards to minimize damage to the environment and to produc-

tivity of the soil and to protect the health and safety of the public...

3. Therefore, it is the purpose of this law to: ...

(4) Assure that surface coal mining operations are so conducted as to protect the environment

Reclamation plans are required of mining companies, not only for the disposal of earth and rock, but also for the water that will be intercepted in the mining operation. Section 444.825 calls for a detailed description of the measures to be taken during mining and reclamation to assure the protection of surface water quality, groundwater quality, the rights of present users to such water, and the quantity of surface and groundwater systems from the adverse effects of the mining processes.

Section 400.855, 2, sets general performance standards applicable to all surface coal mining, including (10) "Minimize the disturbances to the prevailing hydrologic balance at the mine site and in associated off-site areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations ..." and goes so far as to prescribe, in (15), the subsection on the use of explosives, that the operators must "Limit the type of explosives and detonating equipment, the size, ... of blasts based upon the physical conditions of the site so as to prevent ... (iv) Change in the course, channel, or availability of ground or surface water outside the permit area."

And in (22), the subsection on placement of excess spoils, it is specified that ... "(d) The disposal area does not contain springs, natural watercourses or wet weather seeps unless lateral drains are constructed from the wet areas to the main under-drains in such a manner that filtration of the water into the spoil pile will be prevented."

Section 444.860, which covers underground mining operations, establishes similar performance standards, and 2. calls for the mining firm to...

"(9) minimize the disturbances of the prevailing hydrologic balance at the mine-site and in associated off-site areas and to the quantity of water in surface [and] ground water systems both during and after coal mining operations ... by: ...

(a) Avoiding acid or other toxic mine drainage by such measures as, but not limited to:

(i) Preventing or removing water from contact with toxic producing deposits; and

(ii) Treating drainage to reduce toxic content which adversely affects downstream water upon being released to watercourses ..."

Section 400.865, 1, provides for record-keeping, notably ... "(2) For those surface coal mining and reclamation operations which remove or disturb strata that serve as aquifers which significantly insure the hydrologic balance of water use either on or off the mining site, the [Land Reclamation] commission shall specify ...

²² The courts validated the citizen suit provision in the case of *State ex rel. Dresser Indus., Inc. v. Ruddy*, 592 S.W.2d 789 (Mo. 1980).

"(a) Monitoring sites" for surface water drainage,
"(b) Monitoring sites" for groundwater, ... and
"(d) Monitoring sites to record precipitation." All monitoring is to be done according to the commission's standards.

Section 444.880, RSMo, is an interesting part of the Surface Coal Mining Law, in that it provides that "any person having an interest which is or may be adversely affected may commence a civil action on his own behalf to compel compliance with this law . . . in the county in which the surface coal mining operation complained of is located." The statute also notes that "Nothing in this section shall restrict any right which any person . . . may have under any statute, or common law to seek enforcement of any of the provisions of this law and the regulations thereunder, or to seek any other relief . . ." Commonly known as the "citizen suit provision," concerned or affected citizens have the ability to initiate legal action to enforce the law.²²

Mineral Waters

Mineral waters are "mineralized" in that they contain elements in solution. Mineral springs have an economic value, being thought to have certain medicinal or therapeutic values, either for bathing or drinking. This falls under the concept of "beneficial use by the owner". Although mineral waters are not defined in statute, there is a provision for development of mineral springs.

Sections 77.140 to 77.150, RSMo, give cities the power to control watercourses, establish reservoirs, provide flood protection, and erect bathhouses for therapeutic mineral spring baths. Section 77.140 gives the city council power to establish, alter and change the channel of a watercourse, and even wall them or cover them over. This cross-references Section 88.633, water supply. Section 77.150 provides additional authority to "...acquire, improve and operate mineral springs and wells."

Case law does not seem to distinguish the use of mineral waters or springs from the use of other groundwaters, springs, wells or surface waters, and the concept of reasonable use would seem to apply.

Case Law

The case of *State ex rel. City of Excelsior Springs v. Smith*, 82 S.W.2d 37, 336 Mo. 1104, *en banc*, April 29, 1935, validated the statutory power extended in Sections 77.140 - 150, RSMo, and compelled the state auditor to register bonds issued pursuant to law to finance development of the mineral springs in the city of Excelsior Springs, in Clay County.

Metallic Minerals Waste Management—Statutory Law

Sections 444.350-444.380, RSMo, cover this topic. Because what are termed "heavy metals" are known to be toxic to animal life, the

Metallic Minerals Waste Management Act, Section 444.358, RSMo, requires permits for waste areas resulting from mining and processing metallic minerals. Under Section 444.360, RSMo, the application for the permit requires that streams, creeks, and wells be located on a map of the waste area, and the operator must ensure that metallic mineral wastes are contained on-site. The minerals regulated under this law include lead, iron, zinc, copper, gold, and silver.

²³ "to deprive of the protection of the law; outlaw" -Webster's New World Dictionary.

Case Law

The case of *Blankenship v. Kansas Explorations*, 325 Mo. 998, 30 S.W.2d 471 (1930) had to do with downstream riparian damages as a result of mine tailings being placed in a watercourse and causing the filling in of a mill pond. The court found liability on the part of the upstream riparian owner for causing the mine tailings to fill in the pond.

The case of *State ex rel. Dresser Indus., Inc. v. Ruddy*, 592 S.W.2d 789 (Mo. 1980) was brought to seek relief as a result of barite mine tailings discharged into a river. The court found that "enactment of the Clean Water Law did not proscribe²³ common-law nuisance actions for pollution of streams and waterways on behalf of the State or private individuals."

Interstate Mining Compact—Statutory Law

Sections 444.400 - 444.410, RSMo, enact the Interstate Mining Compact into law, defines "mining," and provides for the gubernatorial appointment of members to the interstate mining commission. The statute establishes and discusses the powers and administrative procedures used by the commission for the purposes of the protection of water resources as they relate to mining activities.

Strip Mining—Statutory Law

Sections 444.500-444.755, RSMo, are cited as the "Strip Mine Law," but is more commonly referred to as the "interim coal mine law." The State of Missouri assumed primacy in this area under the terms of the federal Surface Coal Mining Act. The "new coal mine law" is found at Sections 444.800 through 444.970, RSMo. The State Land Reclamation Commission (LRC) is established by Section 444.520. The powers of the LRC are provided in Sections 444.530 and 444.767. Section 444.535 requires reclamation of the mined site, and specifically requires that disturbing the hydrologic balance of the site be minimized in several ways, including practices, watershed controls, filters, and avoiding wetlands, springs, streams, and so on. This law exempts coal operators who mine coal for personal use or mine less than sixteen and two thirds percent of coal, compared with other minerals that are mined from the same pit. (Law enacted, 1978.) There are only a few mine operations left that are regulated under the terms of this law.

²⁴ Per Steve Dunn,
Director, Div. of Mine
Inspection, Dept. of Labor
and Industrial Relations,
telephone conversation,
October 26, 1998.

Case Law

Riparian damage from strip mining resulted in the case of *Bartlett v. Hume-Sinclair Coal Mining Co.*, 351 S.W.2d 214 (K.C. Mo. App. 1961). This case was an action for damages resulting from pollution of streams through coal mining operations. Coal mine tailings over time flowed into streams and polluted streams for downstream riparian use. The court held that, "it is not necessary, in order to charge a person with liability for a nuisance, that he should be the owner of the property on which it is created, but it is sufficient that he created the nuisance."

Land Reclamation-Statutory Law

Sections 444.760-444.790, RSMo, cover land reclamation. The powers of the LRC are provided in Section 444.767, and also in Section 444.530, above. The statute also requires permits and regulates water issues, such as runoff, dams, lakes, and flood plains. DNR's Land Reclamation Commission, DEQ, has the mission to ensure that active mined lands are restored in a manner that provides the best practical land use and protects the health, safety and general welfare of the public.

The minerals regulated include industrial minerals (such as clay, barite, limestone, sand and gravel, oil shale, and tar sands). For industrial minerals, hydrogeologic evaluations are not required, but measures to control erosion and sediment movement off site are required.

Surface Coal Mining-Statutory Law

Sections 444.800-444.970, RSMo, the "new coal mine law," cover this subject. Section 444.905 specifically relates to water resources affected by a surface coal mining operation. This law also requires certain permits. At active coal mines, surface water quality is protected through National Pollutant Discharge Elimination System (NPDES) permitting through DNR/DEQ/ WPCP. As for the protection of groundwater, coal mining companies are required, under land reclamation permits, to conduct hydrogeologic assessments prior to, during, and after mining. They evaluate any impacts to groundwater quantity or quality in the vicinity of mine sites.

Refer also to Sections 242.700 - 242.750, RSMo, (drainage districts for mining purposes), and Chapter 293, RSMo, (mining [safety] regulations), including Section 293.620, on inspection of show caves. Chapter 293, RSMo, provides for a Division of Mine Inspection. This is in the Missouri Department of Labor and Industrial Relations, Division of Labor Standards. The Division of Mine Inspection has 396 currently identified mines, representing a \$4 billion resource. Lead, zinc, copper, cobalt, iron, clay, coal, shale, and silica sand (for glass) were being mined in 1998. Barite, also called tiff, was not being mined then. Limestone mining, and sand and gravel extraction do not come under the provisions of this chapter of Missouri law.²⁴

AQUATIC PLANTS, WEEDS

²⁵ Hammer, *Creating Freshwater Wetlands*, pp. 33-37.

Aquatic plants grow in a semi-wet to wet environment, are characterized by a root system that is below the surface of the water while the stem and leaf area may be below, at or above the surface of the water, and are capable of growing in an environment that is continuously to periodically inundated for more than five days during the growing season.²⁵ Some of these are noxious weeds (so named by the General Assembly), and some are merely nuisance plants. Some are of foreign (non-native) origin, rather than native species.

Statutory Law

Chapter 263, RSMo, addresses the chemical control of noxious weeds, and avoidance of water pollution. Lythrum, or purple loosestrife, is specifically named in Section 263.241 to be a noxious weed. Enforcement of the noxious weeds act generally is left to local governments. The Missouri Conservation Department has a loosestrife control program which provides technical information and assistance.

Sometimes, instead of chemical controls that can contaminate the water, physical actions are preferred. For example, the exotic (non-native) Eurasian water milfoil causes serious problems in Missouri waters by its overgrowth and density. The recommended control is for boaters to clean their hulls and propellers when leaving the water, so as to avoid spreading this invasive plant.

Case Law

There is little, if any, relevant and precedent setting case law directly addressing this topic. Past case law has almost entirely dealt with water pollutants in the traditional sense, rather than non-native biological plant life. With the ever increasing demands being placed upon the state's water resources with particular regard to recreation, water supply, and availability, (and coupled with the MDC's noxious weed control program) one could expect to see case law address this topic in the foreseeable future.

GLOSSARY OF SELECTED TERMS

Source: GIFIS LAW DICTIONARY (unless otherwise noted)

A	appeal or Appellate Court.	¹ 164 S.W.2d 225, 228.
<i>abandonment</i>	knowing relinquishment of one's right or claim to property without any future intent to again gain title or possession; "in law, [it] is defined to be the relinquishment or surrender of rights or property by one person to another. It includes both the intention to abandon and the external act by which the intention is carried into effect . . . there must be the concurrence of the intention to abandon and the actual relinquishment." ¹	² 129 P. 163, 164. ³ 408 P.2d 712, 713; 193 A.2d 601, 602. ⁴ 198 P.2d 769, 772. ⁵ Rechard, et. al., <i>Glossary of Selected Hydrologic and Water Quality Terms</i> , Wyoming Water Resources Research Institute, Laramie, Wyo., 1978, p. 1.
<i>abut</i>	to touch boundaries; to border on; "it implies a closer proximity than the term adjacent. . ." ²	⁶ Sax, <i>Water Law, Planning and Policy</i> , Bobbs-Merrill, 1968, p. xxxi.
<i>accord</i>	agreement ³	⁷ Webster's New World Dictionary, Third College Edition
<i>accretion</i>	"the gradual and imperceptible addition of sediment to the shore by the action of water; it is created by operation of natural causes." ⁴	
<i>accrue</i>	to accumulate; to come into fact or existence.	
<i>acre-foot</i>	a unit of volume of water equal to the volume of a prism one foot high with a base one acre in area; 43,560 cubic feet or 325,851 gallons; commonly used in measuring volume of water used or stored. ⁵ A term used in measuring the volume of water, equal to the quantity of water required to cover one acre one foot in depth. ⁶	
<i>act</i>	a decision of a court, legislature, etc., a law decree; a document stating what has been done, made into law; ⁷ the decision or determination of a legislative body; the complete, formally declared	

⁸ Webster's New International Dictionary, Second Edition, Unabridged

⁹ 226 A.2d 160, 162; 244 F.2d 565.

¹⁰ Black's Law Dictionary, Sixth Edition

¹¹ Black's.

¹² 13 So.2d 649, 650; 502 P.2d 672, 682; 226 S.W.2d 484, 486.

¹³ Rechar, p. 1.

¹⁴ Wright, Federal Courts §9 (2d ed. 1970)

¹⁵ 24 S.E. 913.

¹⁶ Webster's New World.

act of god

will of the legislature, the final step in which is usually the signature of the proper executive officer, distinguished from a bill, which is strictly the draft proposal, and a statute, which is a law.⁸

a manifestation of the forces of nature which are unpredictable.⁹

action

a judicial proceeding.

adjudication

the determination of a controversy and pronouncement of a judgement by a court.

administrative law

a body of law created by administrative agencies in the form of rules, regulations, orders, and decisions to carry out regulatory powers and duties of such agencies, pursuant to statutory law.¹⁰

administrative order

the final disposition of a matter before an administrative judge, the product of administrative adjudication. A regulation issued by an administrative agency interpreting or applying the provisions of a statute.¹¹

adverse interest

against the interest of some other person, usually so as to benefit one's own interest.

adverse possession

a method of acquiring complete title to land through certain acts over an uninterrupted period of time, as prescribed by statute.¹²

alluvial

an adjective referring to soil or earth material which has been deposited by running water.¹³

ancillary jurisdiction

the jurisdiction assumed by federal courts, which extends beyond that expressly conferred upon them by the Constitution.¹⁴

App.

Appellate Court [may be accompanied by abbreviated city, state or federal district court designation]; a court having jurisdiction to review the law as applied to a prior determination of the same case; "not a forum in which to make a new case. It is merely a court of review to determine whether or not the rulings and judgement of the court below upon the case as made were correct."¹⁵

appeal

the request to a higher court for the rehearing or review of a case.¹⁶

<i>appellant</i>	the party who appeals a lower court's decision.	¹⁷ Webster's New World.
<i>appellee</i>	the party who argues, on appeal, against the setting aside of the judgement; the party prevailing in the court below; the party at whom the attack on appeal is aimed.	¹⁸ 137 P.2d 233, 237. ¹⁹ 155 S.W. 928, 930. ²⁰ Sax, p. xxxi.
<i>appendant</i>	attached or added, belonging to as a subsidiary right. ¹⁷	²¹ Rechar, p. 2. ²² 55 N.W.2d 589, 592.
<i>apportion</i>	to divide fairly but not necessarily equally.	²³ 341 S.W.2d 18, 21.
<i>appropriate</i>	verb, "to set apart for, or assign to, a particular purpose or use, in exclusion of all others." ¹⁸	²⁴ 143 U.S. 359.
<i>appurtenant</i>	property law, referring to an easement or covenant which is attached to a piece of land and benefits or restricts the owner of such land in his use and enjoyment thereof. ¹⁹	
<i>aquifer</i>	a porous water-bearing geologic formation. The term is used to describe any underground area which serves as a common supply of water obtained by pumping; ²⁰ a formation, group of formations, or part of a formation that contains enough saturated permeable material to yield significant quantities of water to wells and springs. ²¹	
<i>Ark.</i>	Arkansas Case Law [published].	
<i>assess</i>	to determine the value of property.	
<i>attachment</i>	a proceeding in law by which one's property is seized. ²²	
<i>avulsion</i>	an abrupt change in the course or channel of a stream which forms the boundary between two parcels of land, resulting in the loss of part of the land of one riparian landowner and a consequent increase in the land of the other. ²³ The sudden and perceptible nature of this change distinguishes avulsion from accretion. This distinction is important, for when the change is abrupt, the boundary between the two properties remains unaltered. ²⁴	
<i>bank</i>	the bank of a stream or lake is those elevations which confine the waters when they rise out of the bed. Banks are land on which vegetation	

²⁵ Elgin, "Missouri Riparian Boundaries," p. 3

²⁶ Elgin, p. 3.

²⁷ 131 P.2d 189, 191.

²⁸ Webster's New International Dictionary.

²⁹ 220 S.W.2d 45, 51.

³⁰ Black's.

³¹ 254 A.2d 824, 825.

³² 38 N.J. Eq. 485,488; 118 S.E.2d 17, 18; 5 U.S. 45, 101.

³³ Shapiro and Tresolini, American Constitutional Law, Macmillan, 1979, p. 33.

bed of stream

grows wherever the bank is not too steep to permit such growth, the bed being soil of a different character and having no vegetation, or only such as exists when commonly submerged by water. The bank is the outer edge of a river bed which separates the bed from the adjacent upland, and serves to confine the waters to the bed.²⁵

the bed of a stream or lake extends from high-water mark to high-water mark, or low-water mark to low-water mark, depending on which line the jurisdiction follows.²⁶

beneficial use

with respect to property, such right to its enjoyment as exists where legal title is in one person while right to such use or interest is in another.²⁷ A person who has beneficial use does not hold legal title of property.

bill

a declaration in writing stating some wrong the complainant has suffered from the defendant, or a breach of law by some person; a draft law presented to a legislature for consideration for enactment, a proposed or projected law.²⁸

Bl.

abbreviated last name of court reporter, Black; used in designation of U.S. Supreme Court case law decisions from 1861-1862.

Cal.

California Case Law [published].

case

an action, cause, suit, or controversy, at law or in equity.²⁹

case law

the aggregate of reported cases as forming a body of jurisprudence, or the law of a particular subject as evidenced or formed by the adjudged cases, distinction to statutes and other sources of law.³⁰

cause of action

a claim in law and fact sufficient to demand judicial attention; the composite of facts necessary to give rise to the enforcement of a right.³¹

caveat

in general, a warning or emphasis for caution³² (from Latin).

certification

a seldom used method of appeal whereby a lower court requests that the Supreme Court answer certain question of law so that a correct decision may be made.³³

<i>CFR</i>	Code of Federal Regulations [administrative law made pursuant to federal acts or statutes].	³⁴ Elgin, p. 4.
<i>channel line</i>	the "channel" is the line midway between the banks of the river, not the thalweg line. It also has been defined as that part of a navigable waterway which is traversed by the traffic thereon (probably thalweg). Due to its susceptibility of conflicting definitions, it [this term] probably should not be used. ³⁴ [On the Missouri and Mississippi Rivers, the channel is marked with buoys by the U.S. Coast Guard.]	³⁵ 309 F. Supp. 1178, 1181; 149 F. Supp. 615, 618. ³⁶ 4 Ill. 258, 259. ³⁷ Restatement, Judgments ¶145. ³⁸ 278 U.S. 367, 393. ³⁹ 177 U.S. 485, 488.
<i>Cir.</i>	Circuit Court.	
<i>civil law</i>	that branch of law that pertains to suits outside of criminal practice, pertaining to the rights and duties of persons in contract, tort, etc., as opposed to common law.	
<i>claim</i>	the assertion of a right to money or "property." ³⁵	
<i>close</i>	referring to an enclosure, whether surrounded by a visible or an invisible boundary; land rightfully owned by a party. ³⁶	
<i>code</i>	a systematic compilation of laws. The criminal code refers to the penal laws of the jurisdiction, the motor vehicle code to the laws relating to automobiles, etc. Today most jurisdictions have codified a substantial part of their laws. All jurisdictions record each new law in a volume of session laws or Statutes at Large.	
<i>collateral estoppel</i>	the doctrine which recognizes that the determination of facts litigated between two parties in a proceeding is binding on those parties in all future proceedings against each other. ³⁷	
<i>comity</i>	an equitable division of burdens and benefits. ³⁸ A rule of courtesy by which one court defers to the concomitant jurisdiction of another. ³⁹	
<i>common law</i>	as distinguished from statutory law created by the enactment of legislatures, the common law comprises the body of those principles relating to government and security of persons and property, which derive their authority solely from usages and customs, or from courts recognizing such us-	

⁴⁰ *Black's*; see also 37 N.W.2d 543, 547.

⁴¹ *Webster's New World*.

⁴² Art. I, Sec. 10, Cl. 3.

⁴³ 62 S.E.2d 80, 81.

⁴⁴ Rechar, p. 2.

⁴⁵ 47 S.E. 784, 787.

⁴⁶ 200 N.W. 76, 87.

⁴⁷ 39 U.S.C. §201 (1974)

compact

ages and customs.⁴⁰ The system of jurisprudence, which is based on judicial precedent rather than legislative enactments.

an agreement between two or more individual states⁴¹ as provided for by the U.S. Constitution.⁴²

complainant

the party who initiates the complaint in an action or proceeding; "For practical purposes it is synonymous with petitioner and plaintiff."⁴³

condemn

a taking of private property for public use which raises a duty of just compensation under the laws governing eminent domain.

confiscate

to take private property without just compensation; to transfer property from a private use to a public use.

Conn.

Connecticut Case Law [published].

consumptive use

1) the quantity of water absorbed by crops and transpired or used directly in the building of plant tissue, together with that evaporated from the cropped area; 2) the quantity of water transpired and evaporated from a cropped area, or the normal loss of water from the soil by evaporation and plant transpiration; 3) all activities where the use of water results in a loss in the original water supplied, such as industrial or municipal consumption.⁴⁴

convey

to make a "formal transfer of property from one to another."⁴⁵

corporation

an association of shareholders created under law and regarded as an artificial person by the courts, "having a legal entity entirely separate and distinct from the individuals who compose it, with the capacity of continuous existence or succession, and having the capacity as such legal entity, of taking, holding and conveying property, suing and being sued, and exercising such other powers as may be conferred on it by law, just as a natural person may,"⁴⁶ this includes municipalities, which are incorporated under the laws set forth by state constitution and statutes, as public corporations, to fulfill certain governmental purposes.⁴⁷

<i>court of claims</i>	refers to the court of the U.S. established in 1855 by Congressional Act to "determine all claims founded upon any law of Congress, or upon any regulation of an executive department, or any contract, expressed or implied, within the government of the United States." ⁴⁸	⁴⁸ 10 Stat. 612; 33rd Congress, Session II, Ch. 122 (1855) ⁴⁹ 3 N.Y. 498, 499 ⁵⁰ 47 A. 693, 695.
<i>court of equity</i>	"a court having jurisdiction in cases where a plain, adequate, and complete remedy cannot be had at law," ⁴⁹ a court of conscience. ⁵⁰	⁵¹ <i>Black's</i> . ⁵² 427 P.2d 928; 1 Wheat. 415.
<i>court order</i>	a direction of the court on some matter incidental to the main proceeding which adjudicates a preliminary point or directs some step in the judicial proceeding. ⁵¹	⁵³ Mo. Sec'y. of State ⁵⁴ 30 N.E.2d 994, 995. ⁵⁵ 146 A. 372, 375.
<i>Cr.</i>	abbreviated last name of court reporter, Cranch; used in designation of early U.S. Supreme Court case law decisions from 1801-1815.	⁵⁶ 203 S.W.2d 548, 552.
<i>crime</i>	any act which the sovereign has deemed contrary to the public good; a wrong which the government had determined is injurious to the public and, hence, prosecutable in a criminal proceeding. Crimes can be felonies and misdemeanors. Today, nearly all criminal offenses are statutory, as most jurisdictions either do not recognize common law crimes at all, or at least refuse to develop "new" offenses not punishable under the early common law. ⁵²	
<i>CSR</i>	Code of State Regulations, published ⁵³ [administrative law made pursuant to state statutes].	
<i>Cr.</i>	Court.	
<i>Dall.</i>	abbreviated last name of court reporter, Dallas; used in designation of early U.S. Supreme Court case law decisions from 1789-1800.	
<i>decision</i>	the final judgement or holding of a court of law. ⁵⁴	
<i>decree</i>	the judicial decision of a litigated cause by a court of equity. ⁵⁵	
<i>defendant</i>	in a civil proceeding, the party responding to the complaint; "one who is sued and called upon to make satisfaction for a wrong complained of by the plaintiff." ⁵⁶	

⁵⁷ 145 P.2d 748.

demurrer

⁵⁸ James, Civil Procedure ¶4.1.

⁵⁹ Fed. R. Civ. Proc. 12(b)(6).

⁶⁰ 260 S.W.2d 257, 259.

⁶¹ Sax, p. xxxi.

⁶² Sax, p. xxxi.

⁶³ Webster's New World.

⁶⁴ Sax, p. xxxi .

⁶⁵ 30 Cal. 645, 648.

dereliction

⁶⁶ Rechard, p. 13.

formal allegation that facts as stated in the pleadings, even if admitted, are not legally sufficient for the case to proceed any further. It does not admit anything, in reality, but for purposes of testing the sufficiency of the complaint, a demurrer declares that even if everything stated in the complaint were true, it does not state facts sufficient to constitute a cause of action.⁵⁷ At common law, a demurrer was either sustained or overruled, which in either event ended the case with judgment for the prevailing party.⁵⁸ In modern procedure, a motion to dismiss replaces the demurrer, but if denied the case simply proceeds to trial on the merits.⁵⁹

"a recession of the waters of the sea, a navigable river, or other stream, by which land that was before covered with water is left dry . . . if alteration takes place suddenly the ownership of land remains according to former bounds, but if it is made gradually and imperceptibly the derelict or dry land belongs to the riparian owner from whose shore or bank the water has so receded."⁶⁰

ditch

an artificial open channel or waterway constructed through earth or rock, for the purpose of carrying water. A ditch is smaller than a canal, although the line of demarcation between the two is indefinite. A ditch usually has sharper curvature in its alignment, is not constructed to such refinement of uniformity of grade or cross section, and is seldom lined with impervious material to prevent seepage.⁶¹

diversion

the extraction of water from its natural source, usually into a ditch or canal, for ultimate use on land, in industry or for domestic purposes.⁶² A turning aside from a course, direction, etc. into another; to deflect.⁶³

divide

a high point on land which separates two river basins or drainage basins.⁶⁴

domain

"ownership of land; immediate or absolute ownership; paramount or ultimate ownership, an estate or patrimony which one has in his own right; land of which one is the absolute owner."⁶⁵

domestic water use

the use of water primarily for household purposes, including the watering of gardens, lawns, and shrubbery surrounding a domicile.⁶⁶

<i>dominant</i>	usually dominant estate or dominant tenement; rights and benefits, such as an easement, retained by a former owner when land is conveyed; the other parcel of land is called the servient estate or servient tenement (landholding) ⁶⁷ ; meaning "higher", as opposed to "lower" estate.	⁶⁷ Gifis, p. 64, from "dominant estate [tenement]."
<i>drainage basin</i>	also called catchment area, watershed, or river basin. The land area from which water drains into a river. ⁶⁸	⁶⁸ Sax, p. xxxi. ⁶⁹ 46 Cal. Rptr. 25, 33; 62 Cal. Rptr. 113; 172 S.W.2d 885, 887.
<i>easement</i>	a right of one owner of land to make lawful and beneficial use of the land of another, created by an expressed or implied agreement. ⁶⁹	⁷⁰ Sax, p. xxxi. ⁷¹ 15 A. 2d 647.
<i>effluent</i>	the water, usually polluted, which is discharged into a stream from sewers or from an industrial plant. ⁷⁰	⁷² 29 N.E. 1062. ⁷³ 82 N.Y.S. 961, 964.
<i>eminent domain</i>	the right of a government (city, state, or sovereign) to take private property for public use; an inherent right of sovereignty, ⁷¹ the property owner's consent to the taking is immaterial. ⁷² The 5th Amendment to the U.S. Constitution requires just compensation be made whenever private property is taken for public use by the Congress.	⁷⁴ 42 U.S.C. 300h(b)(1) and (d)(2). ⁷⁵ 138 F.2d 320, 326; 32 Hun. 126, 129.
<i>en banc</i>	French, for "by the full court."	
<i>encroach</i>	to gain unlawfully upon the lands, property, or authority of another; to intrude slowly or gradually upon the rights or property of another; any infringement on the property or authority of another. ⁷³	
<i>endangerment</i>	the presence or expectation of future presence of a contaminant which would result in noncompliance with national primary drinking water standards or otherwise adversely affect the health of persons drinking the water. ⁷⁴	
<i>enjoin</i>	to command or instruct with authority, to abate, suspend, or restrain. ⁷⁵	
<i>equity</i>	most generally, "justice." Historically, equity developed as a separate body of law in England in reaction to the inability of the common law courts, in their strict adherence to rigid writs and forms of action, to entertain or provide a remedy for every injury. Equity and law are no longer bifur-	

⁷⁶ 29 N.Y.S. 342, 343; 6 N.Y.S. 720, 721; 293 F. 633, 637.

⁷⁷ Rechard, p. 15.

⁷⁸ 205 P.2d 1127, 1130; 175 S.E.2d 351, 353.

⁷⁹ 70 S.E. 514, 521.

⁸⁰ *Black's*.

⁸¹ *Black's*.

erosion

cated but are now merged in most jurisdictions, though equity jurisprudence and equitable doctrines are still independently viable.⁷⁶

the wearing away of the soil by running water, glaciers, winds, and waves.⁷⁷

estate

interest, right, or ownership in land or personal property.⁷⁸

estoppel

a court-imposed restraint or "a barring which precludes a person from denying the truth of a fact which has become settled by the facts of judicial proceedings or by the actions of the party himself."⁷⁹

et seq.

Latin for "and the following."

ex contractu

Latin for "out of contract". In both civil and common law, rights and causes of action are divided into two classes, —those arising *ex contractu*, and those arising *ex delicto* (out of a tort). Where cause of action arises from breach of a promise set forth in contract, the action is *ex contractu*, but where it arises from a breach of duty growing out of a contract, it is *ex delicto*.⁸⁰

executive order

an order or regulation issued by the President (or Governor) or some administrative authority under his direction for the purpose of interpreting, implementing, or giving administrative effect to a provision of the Constitution or of some law or treaty.⁸¹

ex rel.

Latin for "upon relation or report."

F

Federal District Court [typically with numeral suffix]; federal case law citations [published].

federal common law

the body of decisional law developed by the federal courts, not resting on state court decisions.

federal courts

the courts of the United States, as distinguished from the courts of the individual states. These courts derive their legitimacy from the Constitution, Article III, Section I, Clause 1.

federal judicial review

the power and duty of all courts to abide by the supremacy clause of the Constitution (Article VI) in construing state constitutional provisions and

	statutes in conflict with the federal Constitution and laws and treaties of the United States. ⁸²	⁸² <i>Black's</i> .
<i>final decision</i>	decision that settles the rights of parties respecting the subject-matter of the suit and which concludes them until it is reversed or set aside. ⁸³ It ends the litigation on the merits and leaves nothing for the court to do but execute the judgment. ⁸⁴ The expression is equivalent to final decree or final judgment. ⁸⁵	⁸³ 291 N.W. 118, 121. ⁸⁴ 183 F.2d 29, 31; 403 F.2d 674, 678. ⁸⁵ 150 F. 32, 34.
<i>flood</i>	an overflow of water on lands that are not normally covered by water. ⁸⁶	⁸⁶ Rechar, p. 16.
<i>floodplain</i>	that portion of a river valley which has been covered with water when the river overflowed its banks at flood stage. ⁸⁷	⁸⁷ Sax, p. xxxi.
<i>F. Supp.</i>	Federal Supplement; federal case law [published].	⁸⁸ Sax, p. xxxi.
<i>groundwater</i>	subsurface water from which wells and springs are fed. In a strict sense, the term applies only to water below the water table. ⁸⁸	⁸⁹ Sax, p. xxxii.
<i>headwaters</i>	the place where a river originates. ⁸⁹	⁹⁰ Elgin, p. 3.
<i>high-water mark</i>	the mark on a stream or lake which separates its bed from its banks. It is the place where action of water is so usual and long continued in ordinary years as to mark upon the soil of the bed a character distinct from that of the banks with respect to the vegetation and the nature of the soil. ⁹⁰	⁹¹ 246 S.W.2d 990.
<i>holding</i>	property in which one has legal title and of which one is in possession. ⁹¹ In procedure, any ruling of the court, including rulings upon the admissibility of evidence or other questions presented during trial. ⁹²	⁹² 218 P.2d 888, 893.
<i>How.</i>	abbreviated last name of court reporter, Howard; used in designation of early U.S. Supreme Court case law decisions from 1843-1860.	⁹³ Rechar, p. 25.
<i>hydrology</i>	the science concerned with the waters of the earth, their occurrence, distribution, and circulation; their physical and chemical properties; and their reaction with the environment, including living beings. ⁹³	
<i>id</i>	Latin for "the same;" abbreviation for <i>idem</i> .	

⁹⁴ 268 N.W. 665, 667.	<i>Ill.</i>	Illinois Case Law [published].
⁹⁵ 107 So. 103, 104.	<i>interest</i>	[in real property], the broadest term applicable to claims in or on real estate, including any right title, or estate in or lien on real property; ⁹⁴ the legal concern of a person in the property, or in the right to some of the benefits or uses from which the property is inseparable. ⁹⁵ [in practice], the term connotes concern for the advantage or disadvantage of parties to the cause of action; ⁹⁶ or bias. ⁹⁷
⁹⁶ 42 So. 2d 445, 446.		
⁹⁷ 165 So.2d 294, 297.		
⁹⁸ Rechard, p. 28.		
⁹⁹ Elgin, p. 4.		
¹⁰⁰ 30 N.E.2d 994, 995.		
¹⁰¹ 319 S.W.2d 930, 934.	<i>irrigation</i>	the controlled application of water to arable lands in order to supply water requirements not satisfied by rainfall. ⁹⁸
¹⁰² 42 P.2d 292.		
¹⁰³ 125 F.2d 430, 434.		
¹⁰⁴ 166 S.E. 570, 580.	<i>island</i>	an island in a river must be of a permanent character, not merely surrounded by water when the river is high, but permanently surrounded by a channel of the river, and not a sand bar subject to overflow by the rise of the river and connected with the mainland when the river is low. ⁹⁹
	<i>judge-made law</i>	law made in the common-law tradition; that law arrived at by judicial precedent rather than by statute; also, judicial construction of statutes so different from their original legislative intent that the resulting application of them can be attributed to the judiciary, rather than to the legislature.
	<i>judgement</i>	the determination of a court of competent jurisdiction upon matters submitted to it. ¹⁰⁰
	<i>just compensation</i>	with regard to a taking of property under the power of eminent domain, it consists of a settlement with a citizen which leaves him no poorer and no richer than he was before the property was taken. ¹⁰¹
	<i>land</i>	broadly, any ground, soil, or earth in reference to real estate or real property ¹⁰² or to any tract which may be conveyed by deed ¹⁰³ and often refers not only to the soil and earth itself, but to things of a permanent nature found there or affixed thereto. ¹⁰⁴
	<i>law</i>	the legislative pronouncement of the rules which should guide one's actions in society; the aggregate of those rules and principles of conduct pro-

	mulgated by the legislative authority, court decisions, or established by local custom; formally recognized as binding by the supreme governing authority and enforced by sanction. ¹⁰⁵	¹⁰⁵ <i>Black's</i> ; see also 123 N.W. 504, 508.
<i>liability</i>	an obligation to do or refrain from doing something; a duty which must eventually be performed; also used to refer to one's responsibility for his conduct.	¹⁰⁶ 160 P.2d 37, 39; 230 S.W.2d 770, 775; 41 A.2d 66, 68; 5 F.Supp. 435, 437. ¹⁰⁷ 34 F. Supp. 274, 280. ¹⁰⁸ Sax, p. xxxii.
<i>license</i>	a right granted which gives the grantee permission to do something which he could not legally do absent such permission. ¹⁰⁶	¹⁰⁹ Elgin, p. 3; see also <i>Coolley v. Golden</i> , 117 Mo. 33, 23 S.W. 100 (1893). ¹¹⁰ 223 N.E.2d 755, 757.
<i>litigation</i>	a judicial contest [civil action] through which legal rights are sought to be determined and enforced in a court of law. ¹⁰⁷	¹¹¹ 262 F.2d 245, 248; 616 S.W.2d 882, 885. ¹¹² 27 F. Supp. 65.
<i>littoral rights</i>	the equivalent of riparian rights for those who border a lake rather than a flowing stream. ¹⁰⁸	¹¹³ 470 P.2d 967.
<i>low-water mark</i>	the low-water mark is the water's edge, that being the only line continuously touched by the water and being the only way the riparian owner will have continuous access to the water. In Missouri, a riparian landowner bordering a [state-defined] navigable water body holds title to the low-water mark. ¹⁰⁹	¹¹⁴ Rechard, p. 28. ¹¹⁵ Simpson, p. 14. ¹¹⁶ Simpson, p. 111.
<i>malum prohibitum</i>	wrong because it is prohibited; made unlawful by statute for the public welfare, but not inherently evil and not involving moral turpitude. ¹¹⁰ It refers to an act which is wrong only because it is made so by statute. ¹¹¹	
<i>market value</i>	the price which goods or property would bring in a market of willing buyers and willing sellers, in the ordinary course of trade. ¹¹² For condemnation purposes, to determine just compensation, market value is not to be based necessarily on the use to which the land is presently put, but on the best and most profitable use to which it is reasonably adaptable. ¹¹³	
<i>meander</i>	the winding of a stream channel ¹¹⁴ [named for Meander River, Turkey ¹¹⁵].	
<i>medial line</i>	the middle of the river; located at equal distances from opposite banks; sometimes referred to in old cases as <i>medium filum aquae</i> . ¹¹⁶	

¹¹⁷ Sax, p. xxxii.	Mo.	Missouri Case Law [published]; also used to identify published statutory law [e.g. RSMo.].
¹¹⁸ Sax, p. xxxii.		
¹¹⁹ Shapiro and Tresolini, p. 65.	Mo. App.	Missouri Court of Appeals [may also list court district prefix, i.e. K.C., Spr., or St.L.]; sometimes used in case law citation.
¹²⁰ Restatement, Torts §287.		
¹²¹ 508 P.2d 190, 192.	<i>mouth of a river</i>	the place where a river empties into another river, or into the sea. ¹¹⁷
¹²² 483 S.W. 996, 1000; Prosser, Law of Torts 571 (4th ed. 1971); 391 S.W.2d 633, 637.	<i>municipal water use</i>	the various ways in which water is used in developed urban areas, including domestic use, industrial use, street sprinkling, fire protection, etc. ¹¹⁸
¹²³ 212 N.W.2d 505, 508.	<i>rational judicial review</i>	the power of all American courts from lowest to highest to pass upon the validity of acts of Congress under the Constitution. ¹¹⁹
	NE	Northeast Reporter [publisher of court decisions and case law].
	<i>negligence</i>	failure to exercise that degree of care which a person of ordinary prudence (a reasonable man) would exercise under the same circumstances; the term refers to conduct which falls below the standard established by law for the protection of others against unreasonable risk of harm; it does not comprehend conduct recklessly disregardful of the interests of others, ¹²⁰ nor does it include intentional infliction of injury on another.
	N.H.	New Hampshire Case Law [published].
	N.J.	New Jersey Case Law [published].
	<i>non-conforming use</i>	a use of land "which lawfully existed prior to the enactment of a zoning ordinance and which may be maintained after the effective date of the ordinance" although it no longer complies with the use restrictions applicable to the area. ¹²¹
	<i>nuisance</i>	"a wrong arising from unreasonable or unlawful use of property to the discomfort, annoyance, inconvenience or damage to another and usually comprehends continuous or recurrent acts." ¹²² Private nuisance is "an actionable interference with a person's interest in the private use and enjoyment of his land." ¹²³ A public or common nuisance is "an unreasonable interference with a right

	common to the general public . . . It is behavior which unreasonably interferes with the health, safety, peace, comfort or convenience of the general community." ¹²⁴ A public nuisance offends the public at large or a segment of the public, a private nuisance offends only a particular person or persons. ¹²⁵	¹²⁴ 299 A.2d 155, 158. ¹²⁵ 303 A.2d 544, 567. ¹²⁶ 107 P.2d 1104, 1106, 1107. ¹²⁷ 420 S.W.2d 530, 533.
<i>N W</i>	Northwestern Reporter [publisher of court decisions and case law].	¹²⁸ 90 F.2d 175, 177. ¹²⁹ 7 S.E.2d 896, 898.
<i>opinion</i>	the reason given for a court's judgement, finding, or conclusion, as opposed to the decision, which is the judgement itself. ¹²⁶	¹³⁰ 72 So. 891. ¹³¹ 139 N.W. 101.
<i>order</i>	a direction of the court on some matter incidental to the main proceeding which adjudicates a preliminary point or directs some step in the judicial proceeding. ¹²⁷	¹³² 55 A.2d 705, 708. ¹³³ Rechar, p. 34.
<i>ordinance</i>	a local law that applies to persons and things subject to the local jurisdiction, ¹²⁸ usually used in its municipal law context to mean an act of a city council or similar body that has the same force and effect as a law when it is duly enacted; it differs from a law in that laws are enacted by a state or federal legislature and ordinances are passed by a municipal legislative body. ¹²⁹	
<i>Otto</i>	last name of court reporter; used in designation of U.S. Supreme Court case law decisions from 1875-1882.	
<i>ownership</i>	"one's exclusive right of possessing, enjoying, and disposing of a thing." ¹³⁰ The term has been given a wide range of meanings, but is often said to comprehend both the concept of possession and, further, that of title and thus to be broader than either. ¹³¹	
<i>party</i>	in a judicial proceeding, a litigant (plaintiff or defendant); a person directly interested in the subject matter of a case. ¹³²	
<i>percolating waters</i>	those waters not supplied by a definite flowing stream which pass through the ground beneath the earth's surface without a definite channel. Groundwaters are assumed to be percolating. ¹³³	

¹³⁴ 124 N.E. 2d 39, 41.	<i>per curiam</i>	Latin for "by the court."
¹³⁵ 134 U.S. 594.	<i>per se</i>	Latin for "by itself."
¹³⁶ 104 S.W. 1009, 1010.	<i>person</i>	"in law, an individual or incorporated group having certain legal rights and responsibilities." ¹³⁴
¹³⁷ 147 F. 44, 46.		This has been held to include foreign and domestic corporations. ¹³⁵ Precise definition and delineation of the term has been necessary for purposes of ascertaining those to whom the 14th Amendment to the U.S. Constitution affords its protection, since that Amendment expressly applies to "persons."
¹³⁸ <i>Webster's New World.</i>		
¹³⁹ <i>Black's.</i>		
¹⁴⁰ <i>The Oxford English Dictionary.</i>		
¹⁴¹ 50 N.Y. 518.		
¹⁴² 488 P.2d 316.	<i>Ret.</i>	abbreviated last name of court reporter, Peters; used in designation of early U.S. Supreme Court case law decisions from 1828-1842.
¹⁴³ Restatement, Property ¶7.	<i>petition</i>	a formal written request or prayer for a certain thing to be done. ¹³⁶
	<i>petitioner</i>	one who presents a petition to a court either in order to institute an equity in proceeding or to take an appeal from a judgement.
	<i>plaintiff</i>	one who initially brings the suit; "he who, in a personal action, seeks a remedy in a court of justice for an injury to, or a withholding of, his rights." ¹³⁷
	<i>policy</i>	a principle, plan, or course of action, as pursued by a government, organization, or individual; ¹³⁸ the general principles by which a government is guided in its management of public affairs, or the legislature in its measures; ¹³⁹ an organized and established system or form of government administration. ¹⁴⁰
	<i>possession</i>	dominion and control over property ¹⁴¹ and distinguished from mere custody. ¹⁴²
	<i>possessory interest</i>	a right to exert control over certain land to the exclusion of others, coupled with an intent to exercise that right. ¹⁴³
	<i>precedent</i>	previously decided case which is recognized as authority for the disposition of future cases under the doctrine of <i>stare decisis</i> .

<i>precipitation</i>	as used in hydrology, the discharge of water in liquid or solid state from the atmosphere generally onto a land or water surface. ¹⁴⁴	¹⁴⁴ Rechar, p. 36. ¹⁴⁵ 98 So. 444. ¹⁴⁶ 131 S.E. 11. ¹⁴⁷ 81 A.2d 137. ¹⁴⁸ 107 A.2d 274, 276. ¹⁴⁹ 202 P.2d 771. ¹⁵⁰ 331 U.S. 1. ¹⁵¹ 42 A. 583, 584; 134 A. 77, 79.
<i>premises</i>	land and its appurtenances, ¹⁴⁵ or a portion thereof and the buildings and structures thereon. ¹⁴⁶	
<i>prescription</i>	a means of acquiring an easement in or on the land of another by continued regular use over a statutory period. ¹⁴⁷ Requisite elements are similar to adverse possession, but does not require hostile possession, therefore can be acquired through permissive use.	
<i>presumption</i>	an assumption of fact resulting from a rule of law which requires such fact to be assumed from another fact or set of facts.	¹⁵² 84 P. 685. ¹⁵³ 173 S.W.2d 631.
<i>property</i>	"every species of valuable right or interest that is subject to ownership, has an exchangeable value, or adds to one's wealth or estate." ¹⁴⁸ One's exclusive right to possess, use, and dispose of a thing, ¹⁴⁹ as well as the object, benefit, or prerogative which constitutes the subject matter of that right. ¹⁵⁰	¹⁵⁴ <i>Black's</i> . ¹⁵⁵ 280 P. 350.
<i>public easement</i>	any easement enjoyed by the public in general. ¹⁵¹	
<i>public property</i>	that which is dedicated to the use of the public ¹⁵² and/or that over which the state has dominion and control. ¹⁵³	
<i>purpresture</i>	an enclosure by a private party of a part of that which belongs to and ought to be open and free to the enjoyment of the public at large. It is not necessarily a public nuisance. A public nuisance must be something which subjects the public to some degree of inconvenience or annoyance; but a purpresture may exist without putting the public to any inconvenience whatever. ¹⁵⁴	
<i>quasi</i>	Latin for "nearly" or "almost."	
<i>quiet enjoyment</i>	the right to unimpaired use and enjoyment of property leased or conveyed.	
<i>real property</i>	"not only land and whatever is erected or growing thereon, or affixed thereto, but also rights issued out of, annexed to, and exercisable within or about, the land." ¹⁵⁵	

¹⁵⁶ Restatement Torts ¶283(a).	<i>reasonable man</i>	a phrase used to denote a hypothetical person who exercises "those qualities of attention, knowledge, intelligence and judgement which society requires of its members for the protection of their own interest and the interests of others." ¹⁵⁶ The test of negligence is based on a failure to do "something which a reasonable man, guided by those considerations which ordinarily regulate the conduct of human affairs, would do, or something which a reasonable and prudent person would not do." ¹⁵⁷ The phrase does not apply to a person's ability to reason (think), but rather the prudence with which he acts under the circumstances [also embodies the concepts of reasonable, reasonableness, and reasonable action].
¹⁵⁷ 43 S.W. 508, 509.		
¹⁵⁸ 26 P.2d 573.		
¹⁵⁹ 350 P.2d 752, 757.		
¹⁶⁰ <i>Black's</i> .		
¹⁶¹ <i>The Oxford English Dictionary</i> .		
¹⁶² Rechar, p. 40.		
¹⁶³ 158 N.W.2d 809, 812.		
¹⁶⁴ Sax, p. xxxii.		
¹⁶⁵ <i>Webster's New World</i> .	<i>reckless</i>	careless, heedless, inattentive to duty. ¹⁵⁸
¹⁶⁶ <i>Webster's New World</i> .	<i>reckless disregard</i>	refers to "an act or conduct destitute of heed or concern for consequences; especially, foolishly heedless of danger; headlong, rash; wanton disregard or indifference to consequences. This implies a consciousness of danger and a willingness to assume the risk." ¹⁵⁹
	<i>regulation</i>	a rule or order prescribed for management of government; ¹⁶⁰ a governing precept or direction. ¹⁶¹
	<i>reservoir</i>	a pond, lake, or basin, either natural or artificial, used for the storage, regulation, and control of water. ¹⁶²
	<i>respondent</i>	in equity, the party who answers a bill or other pleading ¹⁶³ ; also refers to the party against whom an appeal is brought.
	<i>return flow</i>	any flow which returns to a stream channel after diversion for use. In irrigation, water applied to an area which is not consumed in evaporation or transpiration, and returns to a surface stream or ground-water aquifer. ¹⁶⁴
	<i>right</i>	that which a person has a just claim to; power, privilege, etc. that belongs to a person by law, nature, or tradition. ¹⁶⁵
	<i>riparian</i>	of, adjacent to, or living on the bank of a river or, sometimes, of a lake, pond, etc. Designating any right enjoyed by the owner of riparian land. ¹⁶⁶

<i>riparian rights</i>	rights which accrue to owners of land on the banks of water ways, such as the use of such water, ownership of the soil under the water, etc.; "rights not originating in grants, but [arising] by operation of the law, and [which] are called 'natural rights', because they arise by reason of the ownership of lands upon or along streams of water, which are furnished by nature, and the lands to which these natural rights are attached are called in law 'riparian lands.' Riparian lands, in the language of the cases and treaties, include by nature the lands over as [well as] those along which the stream flows, and riparian rights are incident to lands on the bank, as well as those forming the bed of the stream." ¹⁶⁷	¹⁶⁷ 70 A. 472, 479.
		¹⁶⁸ <i>Black's</i> .
		¹⁶⁹ <i>The Oxford English Dictionary</i> .
		¹⁷⁰ Rechar, p. 43.
		¹⁷¹ Also 'servient estate' or 'servient tenement': Gifis, p. 193.
		¹⁷² <i>Webster's New World</i> .
<i>RSMo.</i>	Revised Statutes of Missouri [published statutory law].	
<i>rule</i>	an authoritative regulation for action, conduct, method, procedure, arrangement, etc; an established practice that serves as a guide to usage; a regulation or guide established by a court governing court practice and procedure. An established standard, guide, or regulation. ¹⁶⁸ A principle, regulation, or maxim governing individual conduct alone, in a group, or in society. ¹⁶⁹	
<i>scour</i>	the erosive action of running water in streams, which excavates and carries away material from the bed and banks, occurring in both earth and solid rock material. ¹⁷⁰	
<i>S.D.N.Y</i>	State District {Court} of New York.	
<i>SE</i>	Southeast Reporter [publisher of court decisions and case law].	
<i>servient</i>	as opposed to dominant; re. an easement; may refer to a downstream riparian's land holdings, known as the servient tenement, subject to use in some way by an upstream riparian, the owner of the dominant estate; ¹⁷¹ lower, as opposed to upper, landholder (from <i>tener</i> , to hold).	
<i>servitude</i>	the burden placed upon the property of a person by a specified right another has in its use. ¹⁷² Examples include "navigational servitude" as a public use right, over and above any private use of a watercourse.	

¹⁷³ Mellinkoff, David, <i>Mellinkoff's Dictionary of American Legal Usage</i> , West Publishing Co., St. Paul, Minn., 1992.	<i>sic</i>	Latin for "thus" or "thusly" [used to show a spelling or usage by a different author, subject to question].
¹⁷⁴ 156 P.2d 340, 345.	<i>slip opinion</i>	a court's own printing of its opinion... as the first and quick official publication. "The <i>slip opinion</i> is unbound, often no more than a single slip of paper, frequently corrected before publication in the law reports." ¹⁷³
¹⁷⁵ Constitution of Missouri, Art. V, Sec. 3 and Sec.18.		
¹⁷⁶ 91 U.S. 367, 375.	<i>stare decisis</i>	Latin for "let the decision stand." ¹⁷⁴
¹⁷⁷ <i>Black's</i> .	<i>state judicial review</i>	the power of state courts to review laws of the state legislature under the state constitution. ¹⁷⁵
	<i>statute</i>	an act of the legislature, adopted pursuant to its constitutional authority, by prescribed means and in certain form such that it becomes the law governing conduct within its scope. Statutes are enacted to prescribe conduct, define crimes, create inferior governmental bodies, appropriate public monies, and in general to promote the public good and welfare. Lesser governmental bodies adopt ordinances; administrative agencies adopt regulations.
	<i>suit</i>	very comprehensive and understood to apply to any proceeding in a court of justice by which an individual pursues that remedy which the law affords. ¹⁷⁶
	<i>Supp.</i>	Supplement.
	<i>supra</i>	Latin for "above."
	<i>SW</i>	Southwest Reporter [published court decisions and case law], second volume series is followed by "2d." as in SW2d.
	<i>taking</i>	of several meanings, the one most pertinent involves the taking of property when government action directly interferes with or substantially disturbs the owner's use and enjoyment of the property; to constitute a taking, within constitutional limitation, it is not essential that there be physical seizure or appropriation, and any actual or material interference with private property rights constitutes a taking. ¹⁷⁷

<i>Tex.</i>	Texas Case Law [published].	¹⁷⁸ Elgin, p. 4.
<i>thalweg line</i>	the thalweg line is the deepest way or valley of a river bed. It has also been referred to as the "sailing channel." ¹⁷⁸	¹⁷⁹ Simpson, p. 111. ¹⁸⁰ Elgin, p. 4.
<i>thread of the stream</i>	the thread of a stream is the center of the flowing water when the stream is at its lowest flow [stage]. ¹⁷⁹ It is irrespective of the thalweg line which may be closer to one bank than another. ¹⁸⁰ The "middle" of the river.	¹⁸¹ 256 N.E.2d 254, 259. ¹⁸² 107 F.2d 819, 827.
<i>tort</i>	a wrong; a private or civil wrong or injury independent of contract, resulting from a breach of legal duty. ¹⁸¹ The essential elements of a tort are the existence of a legal duty owed by defendant to plaintiff, breach of that duty, and a causal relationship between defendant's conduct and the resulting damages to plaintiff.	¹⁸³ 69 F.2d 44, 48. ¹⁸⁴ See also: Restatement 2d, Foreign Relations Law of the United States ¶140 (1965); Constitution of the United States, Art. I, Sec. 10; Art. II, Sec. 2; and Art. VI, Cl. 2. ¹⁸⁵ 69 So.2d 724, 726.
<i>treaty</i>	an international agreement made between two or more independent sovereign nations with a view to the public welfare ¹⁸² requiring (in the U.S.) advice and consent of the Senate for ratification; distinguished from 1) an executive agreement which does not require the advice and consent of the Senate and addresses topics narrower in nature and is pursuant to formal authority delegated to the President by the Congress in specific legislation; ¹⁸³ and 2) a compact which is an agreement between two or more states recognized by Congress pursuant to the US Constitution. ¹⁸⁴	¹⁸⁶ See also: Burby, Real Property 7 (3rd ed. 1965).
<i>trespass</i>	a wrongful interference with or disturbance of the possession of another. ¹⁸⁵	
<i>U.S.</i>	United States (Supreme) Court decisions [published case law].	
<i>U.S.C.</i>	United States Code [published statutes].	
<i>use</i>	the right to enjoy the benefits flowing from real or personal property. ¹⁸⁶	
<i>usufruct</i>	in the civil law, the right to use and enjoy property vested in another, "and to draw from the same all the profit, utility, and advantage which it may	

¹⁸⁷ 75 P. 698, 699.

¹⁸⁸ *Webster's New World*.

¹⁸⁹ 31 Ill. App. 325, 338.

¹⁹⁰ 446 S.W.2d 243, 244.

¹⁹¹ 102 S.E. 643, 644.

¹⁹² Sax, p. xxxii.

¹⁹³ 6 Cyc. 737.

V

V.A.M.S.

vis-a-vis

verdict

vested interest

Wall.

Wash.

water table

Wheat.

writ of certiorari

produce, provided it be without altering the substance of the thing."¹⁸⁷

Abbrev. of *versus*, Latin for "against."

Vernon's Annotated Missouri Statutes [published statutory cross references].

French for "face to face", or "opposite to."¹⁸⁸

the opinion of a jury, or of a judge sitting as a jury, on a question of fact;¹⁸⁹ a verdict differs from a judgement in that a verdict is not a judicial determination, but rather a finding of fact which the trial court may accept or reject and utilize in formulating its judgement.¹⁹⁰

[an interest] in which there is a present fixed right of present or future enjoyment; "a present right or title to a thing, which carries with it an existing right of alienation, even though the right to possession or enjoyment may be postponed to some uncertain time in the future. . ."¹⁹¹

abbreviated last name of court reporter, Wallace; used in designation of early U.S. Supreme Court case law decisions from 1863-1874.

Washington {state} Case Law [published].

the highest elevation, at or below the surface of the earth, under which the ground is saturated with water.¹⁹²

abbreviated last name of court reporter, Wheaton; used in designation of early U.S. Supreme Court case law decisions from 1816-1827.

an order to a lower court from a higher court to send the entire record of the case to the higher court for review.¹⁹³

LIST OF SELECTED ACRONYMS

APCP	<i>Air Pollution Control Program, DNR, DEQ</i>
CCWWC	<i>Clarence Cannon Wholesale Water Commission</i>
cfs	<i>cubic feet per second, a rate of stream flow in common use</i>
COE	<i>Corps of Engineers, United States Army (also USACE: United States Army Corps of Engineers)</i>
DAS	<i>Division of Administrative Support, DNR</i>
DE	<i>Division of Energy, DNR</i>
DED	<i>(Missouri) Department of Economic Development</i>
DEQ	<i>Division of Environmental Quality, DNR</i>
DGLS	<i>Division of Geology and Land Survey, DNR</i>
DNR	<i>(Missouri) Department of Natural Resources</i>
DRSP	<i>Dam and Reservoir Safety Program, DNR, DGLS</i>
DSP	<i>Division of State Parks, DNR</i>
EIERA	<i>Environmental Improvement and Energy Resources Authority, DNR</i>
EPA	<i>(United States) Environmental Protection Agency</i>
ESP	<i>Environmental Services Program, DNR, DEQ</i>
FEMA	<i>(United States) Federal Emergency Management Agency</i>
HWP	<i>Hazardous Waste Program, DNR, DEQ</i>
LRP	<i>Land Reclamation Program, DNR, DEQ</i>
MDA	<i>Missouri Department of Agriculture</i>
MDC	<i>Missouri Department of Conservation</i>

M D H	<i>Missouri Department of Health</i>
MDHT	<i>Missouri Department of Highway and Transportation [also MoDOT: Mo. Dept. of Transportation]</i>
MDPS	<i>Missouri Department of Public Safety</i>
PCB	<i>Poly Chlorinated Biphenyl (a chlorinated isomer, toxic to people and animals)</i>
PDWP	<i>Public Drinking Water Program, DNR, DEQ</i>
PSC	<i>Public Service Commission, DED</i>
PWSD	<i>Public Water Supply District [usually with number or county designation]</i>
ROP	<i>Regional Office Program, DNR, DEQ</i>
SC	<i>Supreme Court [with state or federal identification accompanying]</i>
SEMA	<i>State Emergency Management Agency, MDPS</i>
SWCP	<i>Soil and Water Conservation Program, DNR, DEQ</i>
SWMP	<i>Solid Waste Management Program, DNR, DEQ</i>
TAP	<i>Technical Assistance Program, DNR DEQ</i>
USCG	<i>United States Coast Guard</i>
USDA	<i>United States Department of Agriculture</i>
USDI	<i>United States Department of the Interior</i>
USFS	<i>United States Forest Service, USDA</i>
USFWS	<i>United States Fish and Wildlife Service, USDI</i>
USGS	<i>United States Geological Survey, USDI</i>
WPCP	<i>Water Pollution Control Program, DNR, DEQ</i>
WRP	<i>Water Resources Program, DNR, DGLS</i>

WATER LAW BIBLIOGRAPHY AND SUGGESTED READINGS

- Ahrens, S.N., ed., *Official Manual State of Missouri, 1995-1996*, Rebecca McDowell Cook, Secretary of State, Jefferson City, Mo., 1995.
- American Bar Association, *You and the Law*, a Consumer Guide Book, Publications International, Ltd., Lincolnwood, Ill., 1990.
- Armstrong, et al., *Missouri Environmental Law Handbook*, Government Institutes, Inc., 1990.
- "A Wetlands Primer," *Natural Resources & Environment*, Vol. 9, No. 1, Summer, 1992.
- Baldwin III, F.A., ed., *Legal Control of Water Pollution*, Univ. of California-Davis, School of Law, Davis, Cal., 1969.
- Beck, R.E., ed., *Waters and Water Rights, 1991 Edition*, vol. 1-7, The Michie Co., Charlottesville, Va., 1991.
- Beuscher, J.H. and MacDonald, J.B., *Water Rights*, College Print. and Typing Co., Madison, Wis., 1967.
- Branstad, Terry E., "A View From Below The Reservoirs: Another Perspective On The Missouri River," 36 *South Dakota Law Review*, 1991.
- Brookshire, Cynthia N., *Missouri Water Quality Assessment*, Water Resources Report Number 47, Missouri State Water Plan Series Volume III, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1997.
- Brown, J.A., "Mother Nature and Missouri's River Boundaries," 51 *Journal of the Missouri Bar*, Jan./Feb., 1995, Jefferson City, Mo.
- Brundage, Robert, "Groundwater: The Law of Use and Abuse," *Missouri Water Well Association Newsletter*, Vol. 3, August, 1995.
- Cartwright, J.M., *Farm and Ranch Real Estate Law*, The Lawyers Co-operative Publishing Co., 1972.
- Chambers, Reid, and Echohawk, John, *Implementing Winters Doctrine Indian Reserved Water Rights*, 1990.
- Cohen, M.L. and Olson, K.C., *Legal Research in a Nutshell*, 5th Edition, West Publishing Co., St. Paul, Minn., 1992.
- Davis, Peter N., "Federal And State Water Quality Regulation and Law In Missouri," *Missouri Law Review*, Vol. 55, No. 2., Spring, 1990.

- Davis, P.N., Sharp, J.M., and Falteisek, J.D., *Missouri Instream Flow Requirements: A Physical and Legal Assessment*, Missouri Office of Administration, Budget and Planning, Jefferson City, Mo., 1980.
- Davis, P.N., "Law of Surface Water in Missouri," 24 *Missouri Law Review*, 137, 1959.
- Davis, P.N., "Law of Repelling Floods in Missouri," *Missouri Environmental Law and Policy Review*, Vol. 2, No. 3.
- Davis, P.N. and Cunningham, J., ed., *Missouri State Laws pertaining to Water and Related Land Resources*, Department of Natural Resources, Clean Water Commission, Jefferson City, Mo., 1977.
- Davis, P.N., "Law and Fact Patterns in Common Law Water Pollution Cases," *Missouri Environmental Law and Policy Review*, Vol. 1, No. 1, Summer, 1993.
- Davis, P.N., "Recreational Use of Watercourses," *Missouri Environmental Law and Policy Review*, Vol. 4, No. 2, 1996.
- Davis, P.N., Part XI - River Basin and State Surveys: "Missouri," in *Waters and Water Rights*, 1991 Edition, R.E. Beck, editor, The Michie Co., Charlottesville, Virginia, 1991.
- Davis, P.N., Part XII - "Glossary," in *Waters and Water Rights*, 1991 Edition, R.E. Beck, editor, The Michie Co., Charlottesville, Virginia, 1991.
- Dewsnup, R.L., and Jensen, D.W., ed., *A Summary-Digest of State Water Laws*, National Water Commission, Arlington, Va., 1973.
- Dicks, Donald L. and Vineyard, Jerry D., "WATERSHED DECISIONS: Missouri Charts its Course," *Missouri Resource Review*, Vol. 9, No. 2, Fall, 1992, Jefferson City, Mo.
- Drew, John and Chen, Sherry, *Hydrologic Extremes in Missouri: Flood and Drought*, Water Resources Report Number 49, Missouri State Water Plan Series Volume V, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1997.
- DuCharme, Charles B. and Miller, Todd M., *Water Use of Missouri*, Water Resources Report Number 48, Missouri State Water Plan Series Volume IV, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1996.
- Dunne, Thomas and Luna Leopold, *Water in Environmental Planning*, Freeman and Co., N.Y., 1978.
- "Easements- Public Fishing Rights," 35 *Ore. L. Rev.* 137, 1956.
- Elgin, R.L. and Knowles, D.R., *Legal Principles of Boundary Location for Arkansas*, Landmark Enterprises, Rancho Cordova, Cal., 1984.
- Elgin, Richard L., "Missouri Riparian Boundaries," address delivered to the Missouri Association of Registered Land Surveyors (MARLS), 1998.
- Environmental Compliance In Missouri*, Business and Legal Reports, Inc., Madison, Conn., 1993.
- Environmental Law - Missouri*, Mo. Bar Assn., Jefferson City, Mo., 1991.
- Epperson, Jane E., *Missouri Wetlands: A Vanishing Resource*, Water Resource Report No. 39, Missouri Department of Natural Resources, Division of Geology and Land Survey, 1992.
- Evans, Alvin E. "Riparian Rights in Artificial Lakes and Streams," 16 *Mo. L. Rev.* 117, 1951.

- Federal Utility Regulations*, Public Utility Reports 1942-69, Washington, D.C., 1970.
- Frarey, L.C. and Pratt, S.J., "Environmental Regulation of Livestock Production Operations," *Natural Resources & Environment*, Vol. 9, No. 3, Winter, 1995.
- Frye, R.S., et al., *Clean Water Act Update*, Executive Enterprises Publications, New York, 1987.
- Gaffney, Richard M., *Flood Report Analysis*, Water Resources Report Number 54, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1996.
- Garner, Bryan A., Editor in Chief, *Black's Law Dictionary*, Seventh Edition, West Group, St. Paul, Minn., 1999.
- Garner, Bryan A., *A Dictionary of Modern Legal Usage*, Oxford University Press, New York, N.Y. and Oxford, U.K., 1987.
- Getches, D.H., *Water Law in a Nutshell*, West Publishing Co., St. Paul, Minn., 1990.
- Gifis, S.H., *Law Dictionary*, Barron's Educational Series, Inc., Woodbury, N.Y., 1975.
- Goldfarb, W., *Water Law*, 2nd ed., Lewis Publishing, 1988.
- Goplerud III, C.P., "Water Pollution Law: Milestones from the Past and Anticipation of the Future," 10 *Natural Resources & Environment*, No. 2, Fall, 1995.
- Grad, F.P., *Environmental Law*, M. Bender, Inc., New York, N.Y., 1973.
- Graham, J.S., "The Reasonable Use Rule In Surface Water Law," 57 *Missouri Law Review*, No. 1, Winter, 1992.
- Haines, C.G., *The American Doctrine of Judicial Supremacy*, Russell and Russell, Inc., New York, N.Y., 1959.
- Hammer, Donald A., *Creating Freshwater Wetlands*, Lewis Publishers, Boca Raton, Fla., 1992.
- Hays, Charles, ed., *A Quick Guide To Missouri Water Resource Agencies*, State Water Plan Informational Document No. 5, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1995.
- <http://www.state.mo.us> (Internet address for Missouri State Government Home Page)
- <http://www.moga.state.mo.us/homestat.htm> (Internet address for Mo. Statutes)
- <http://www.osca.state.mo.us/sup/index.nsf> (Internet address for Mo. case law)
- Improving The Safety Of Our Nation's Dams—Progress And Issues*, Report To The Congress [sic] by the Comptroller General of the United States, U.S. General Accounting Office, Washington, D.C., 1979.
- Inland Water Transportation Cases*, U.S. Maritime Commission, U.S. Government Printing Office, Washington. D.C. (no date).
- Interagency Floodplain Management Review Committee to the Administration Floodplain Management Task Force, *Sharing the Challenge: Floodplain Management into the 21st Century (The Galloway Report)*, Washington, D.C., 1994.
- Jacobson, S.W., *Avoiding Environmental Liability In Real Estate*, National Business Institute, Inc., Eau Claire, Wis., 1990.
- Jacobstein, J.M. and Mersky, R.M., *Water Law Bibliography: 1847-1965*, Jefferson Law Book Co., Silver Springs, Md., 1966.

- Kershen, D.L., "Agriculture Water Pollution: From Point to Nonpoint and Beyond," *Natural Resources & Environment*, Vol. 9, No. 3, Winter, 1995.
- Kusler, Jon A., *Floodplain Regulations And The Courts, 1970 - 1981*, U.S. Water Resources Council and the Tennessee Valley Authority, Special Publication 5, 1982.
- Lauer, T.E., "Common Law Background of the Riparian Doctrine," 28 *Missouri Law Review* 60, 1963.
- Ludes, F. and Gilbert, H., ed., *Corpus Juris Secundum*, West Publishing Co., St. Paul, Minn., 1968 (multi volume set).
- McCarter, W. D., "Conservation Laws: A Delicate Balance," *Missouri Conservationist*, Vol. 56, No. 11, November, 1995.
- McGhee, "Liability of Dam Owner for Flooding Caused by Sedimentation: Effect of Statute of Limitations," 15 *Mo. L. Rev.*, 1950.
- McNitt, J.J., "A New Chapter in Missouri Percolating Groundwater Law: The Non-Severability of Water Rights From Land," 59 *Missouri Law Review* (Mo.L.Rev.), No. 1, Winter, 1994.
- Mellinkoff, David, *Mellinkoff's Dictionary of American Legal Usage*, West Publishing Co., St. Paul, Minn., 1992.
- Meyers, C. and Tarlock, A.D., *Water Resource Management*, 3rd Edition, Foundation Press, Mineola, N.Y., 1988.
- Mickelson, G.S., "My View Of The Missouri River" [sic], 36 *South Dakota Law Review*, 1991.
- Miller, Donald, and Hays, Charles, *Missouri Drought Response Plan*, Water Resources Report 44, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1995.
- Missouri Basin States Association, *Conference Proceedings, The Pick-Sloan Missouri Basin Plan*, Omaha, Nebr., 1983.
- Missouri Revised Statutes, 1994, and Supplements, RSMo, and Cumulative Supplement, RSMo, 1996*, Committee on Legislative Research, Missouri General Assembly, Jefferson City, Mo.
- Missouri River Main Stem Master Water Control Manual*, U.S. Army, Corps of Engineers, Missouri River Division, Omaha, Neb., 1979.
- Missouri Water Pollution Law*, Water Pollution Board Biennial Report, 1963-64, Jefferson City, Mo., 1964.
- Missouri Water Resources Development*, Missouri Department of Natural Resources, Jefferson City, Mo., 1976.
- Missouri Water Resources Law 1997 Annual Report*, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1997.
- "Modification of the Riparian Theory and Due Process in Missouri," 34 *Missouri Law Review* 562, 1969.
- "Navigable Waters—Artificial Lake Connected to River," 24 *Missouri Law Review* 392, 1959.
- "Navigability of Streams in Missouri," 19 *Missouri Law Review* 401, 1954.
- Nelson, M.A., *Guide to Missouri State Documents and Selected Law Related Materials*, American Association of Law Libraries, Chicago, Ill., 1991.

- Nolan, J.R., and Nolan-Haley, J.M., ed., *Black's Law Dictionary*, Sixth Edition, West Publishing Co., St. Paul, Minn., 1990.
- "Property—Rights of Riparian Owner in Missouri with Respect to Obstruction of a Natural or Artificial Watercourse," 18 *Missouri Law Review* 67, 1953.
- "Public Right of Fishery as an Incident of Navigation," 40 *Minn. L. Rev.* 88, 1955.
- "Real Property—Public Fishing Rights in Floatable Stream," 1955 *Wash. U.L.O.*
- "Real Property—Right to Float-Fish through Another's Land," 10 *Ark. L. Rev.* 145, 1955-56.
- Rechard, P.A.; McQuisten, R.; Perry, L.K.; Wesche, L.B., and Weand, B.L., *Glossary of Selected Hydrologic and Water Quality Terms*, Wyoming Water Resources Research Institute, Laramie, Wyo., 1978.
- Rice, L. and White, M., *Engineering Aspects of Water Law*, Krieger, 1991.
- Rodgers, Jr., W.H., *Environmental Law - Air and Water*, Volume 2, West Publishing Co., St. Paul, Minn., 1986.
- Sax, J.L., *Water Law, Planning & Policy Cases and Materials*, The Bobbs-Merrill Company, Inc., Indianapolis, Ind., 1968.
- Schuette, D., "Barnyard Boom: CAFOs and the Environment," *Missouri Resources*, Vol. 14, No. 3, Fall, 1997.
- Selmi, D.P. and Manaster, K.A., *State Environmental Law*, Clark Boardman Callaghan, Deerfield, Ill., 1994.
- Shapiro, M. and Tresolini, R., *American Constitutional Law*, Fifth Edition, Macmillan Publishing Co., New York, 1979.
- Simpson, James A., *River & Lake Boundaries, Surveying Water Boundaries - A Manual*, Plat Key Publishing, Kingman, Ariz., 1994.
- Sive, D. and Frank, F., *A Practical Guide To Environmental Law*, American Law Institute-American Bar Association, Philadelphia, Pa., 1987.
- Statsky, William, *West's Legal Thesaurus/Dictionary*, West Publishing Co., St. Paul, Minn., 1986.
- Tarlock, A.D., *Law of Water Rights and Resources*, Clark Boardman Environmental Law Series, Deerfield, Ill., 1988.
- "The Rights of a Riparian Landowner in Missouri," 19 *Missouri Law Review* 138, 1954.
- Thompson, G.P., *Courts and Water: The Role of the Judicial Process*, Environmental Law Institute, Washington, D.C., 1972.
- Tripp, J.T.B., "Public Input In The Permitting Process: The Section 404 Example," 2 *Natural Resources & Environment*, Winter, 1987.
- U.S. Water Resources Council, *The Nation's Water Resources, 1975 - 2000*, Second National Water Assessment, Vol. 2: Water Quantity, Quality, and Related Land Considerations, Part IV, Water Supply and Water Quality Considerations; Washington, D.C., 1978.
- Upper Mississippi River Basin Commission, *Comprehensive Master Plan for the Management of the Upper Mississippi River System*, Upper Mississippi River Basin Commission, St. Paul, Minn., Jan. 1, 1982.
- Vandike, James E., *Surface Water Resources of Missouri*, Water Resources Report Number 45, Missouri State Water Plan

- Series Volume I, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1995.
- Vaught, R., and Bowmaster, J., *Missouri Wetlands and their Management*, Missouri Department of Conservation, Jefferson City, Mo., 1983.
- Vernon's Annotated Missouri Statutes, West Publishing Co., St. Paul, Minn., 1989, with 1997 Cumulative Annual Pocket Part.
- Vineyard, Jerry D., *Water Resource Sharing: The Realities of Interstate Rivers*, Water Resources Report Number 50, Missouri State Water Plan Series Volume VI, Missouri Department of Natural Resources, Division of Geology and Land Survey, Rolla, Mo., 1997.
- Wahl, R.W., "Redividing the Waters: The Reclamation Act of 1902," 10 *Natural Resources & Environment*, No. 1, Summer, 1995.
- Walker, Harvey, Ph.D., *Law Making in the United States*, The Ronald Press Co., New York, 1934.
- Want, W.L., *Law of Wetlands Regulation*, Clark Boardman Environmental Law Series, New York, 1989.
- "Water Law — Ground Water Rights in Missouri — A Need for Clarification," 37 *Mo. L. Rev.* 357, 1972.
- Watershed Management Above Drinking Water Reservoirs*, University Extension, University of Missouri and Lincoln University, Columbia, Mo., 1995.
- West's Missouri Law Finder*, West Publishing Co., St. Paul, Minn., 1997.
- Wiel, S.C., "Origin and Comparative Development of the Law of Watercourses in the Common Law and in the Civil Law," 6 *California Law Review* 4, 1918.
- Wiel, S.C., "Waters: American and French Authority," 33 *Harvard Law Review*, 133, Cambridge, Mass., 1918.
- "Words and Phrases" from *West's Missouri Digest 2d*, Vol. 50, West Publishing Co., St. Paul, Minn., 1985.
- Words and Phrases Permanent Edition 1658 to Date*, West Publishing Co., St. Paul, Minn., 1953, including 1997 Cumulative Pocket Part, multivolume set.
- Wright, K.R., ed., *Water Rights of the Fifty States and Territories*, American Water Works Assn., Denver, Colo., 1990.

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APPENDIX 1

ADJUDICATED WATER CASES

NOTE: Please refer to recent published case law for most current judicial holdings.

Abbott v. Kansas City, St.J. & C.B.R.R., 83 Mo. 271 (1884) the court applied the common enemy doctrine. Unless authorized by lawful authority, one cannot interfere, to any material extent, with the waters of a running stream. When lawful authorization is present, a person is liable only in case of negligence for damage to property as a result of construction activities which interfere with the normal flow of a creek, and not the warding off of diffused surface waters.

Alegria v. Keeney, 687 A.2d. 1249 (1997) the Rhode Island Supreme Court held that the denial of a developer's application to alter wetlands was not a "regulatory taking" of land which required just compensation. The court held that there was no proof of a "total taking" because the land still had some development value. The developer purchased the property knowing that its wetlands were subject to pervasive state regulation and as such any investment-backed expectation to develop the property as though the wetlands were not present was unreasonable.

Alexander v. Wabash R.R. Co., 38 S.W.2d 545 (1951) involved landowner rights where private property abuts a railroad right-of-way. Railroad embankment dammed up surface waters and damaged crops on adjoining land. Defendant does not have to anticipate plaintiff's pleads of negligence, such is up to the plaintiff. A plaintiff can not sue on one cause of action and recover on another.

Anaheim Union Water Co. v. Fuller, 150 Cal. 327, 88 P. 978 (1907) established criteria

used to determine what constitutes a riparian tract of land—within the watershed and in physical contact with the watercourse.

Anderson v. City of Jefferson, 262 S.W.2d 169 (K.C. Mo. App. 1953) involved permanent and transient watercourses. Rights under common enemy doctrine must be exercised reasonably so as not to needlessly injure another.

Anderson v. Inter-River Drainage & Levee Dist., 309 Mo. 189 (1925) involved drainage, levees, eminent domain, and protection from overflow waters. Overflow water was caused by a high levee. A drainage district on one side of a river is not liable for damages for injuries to somewhat higher lands on the opposite side of the river, outside the district boundary. The drainage district did not obstruct the river channel or change the natural watercourse. While the drainage district is not an individual landowner, it has power to drain swamps and overflow lands. It falls within the police powers of the state, as the drainage district is organized and authorized under statutes of a subdivision of the state.

Arkansas et al v. Oklahoma et al, 503 US 91 (1991) this case stemmed from the construction of a new sewage treatment plant built by the city of Fayetteville, Arkansas. The city received a National Pollution Discharge Elimination System (NPDES) permit from the U.S. EPA to discharge the treated effluent from the new plant into a stream which fed the Illinois River in Arkansas and ultimately flowed across the Arkansas state line into Oklahoma. Oklahoma challenged the permit in Administrative

Court alleging that the Fayetteville discharge violated Oklahoma water quality standards which allow no degradation of water quality in the upper Oklahoma reaches of the Illinois River. The EPA remanded the permit, ruling that the Clean Water Act requires an NPDES permit to impose any effluent limitations necessary to comply with applicable state water quality standards, which the permit would violate if there were any detectable violations of the state of Oklahoma's water quality standards.

In effect, the downstream state of Oklahoma was setting the water quality standards for a body of water that originated in Arkansas. The Administrative Law Judge made detailed findings with the EPA under the terms of the CWA's NPDES and concluded that the city of Fayetteville had satisfied the standard and sustained the permit's issuance. On appeal by Oklahoma a federal appellate court reversed the ALJ decision, holding that, "the CWA does not allow a NPDES permit to be issued where a proposed effluent discharge source would contribute to conditions already in violation of water quality standards." It found the Illinois River already degraded and additional Fayetteville effluent would contribute to the river's deterioration. Arkansas then appealed to the U.S. Supreme Court, which upheld EPA's action to issue the permit holding such action was authorized by the CWA. The court reasoned that "where an interstate discharge is involved, both federal common law of nuisance and the affected state's common law are pre-empted. Affected states may not block a plan but rather must apply to EPA for ruling on the impact upon interstate waters."

Continuing, the Supreme Court found, "EPA has construed the CWA to require denial of a permit in accordance with an affected state's standards unless the affected state's water quality requirements can be assured. The EPA requirement that a NPDES permit applicant comply with an affected downstream state's water quality standard is a reasonable exercise of the statutory discretion given it by Congress. EPA is not bound to mandate the

upstream state comply with the downstream state's standards. The CWA vests in the EPA and in states broad authority to develop long-range, area wide programs to alleviate and eliminate existing pollution. Nothing in the act mandates a complete ban on discharges into a waterway that is in violation of existing water quality standards." Based upon the scientific research of the EPA at the direction of the ALJ, the court allowed the permit to stand and the Fayetteville treatment plant to begin operation.

Arizona v. California, 373 U.S. 546 (1963) involved interstate water rights, instream flows, and interstate water compacts. The Supreme Court upheld the authority of Congress to allocate or apportion interstate surface water flows between basin states. Lower basin states are entitled to a certain portion of anticipated natural flows. The Court also held that Congress delegated to the Secretary of the Interior the power and authority to distribute the allocated water to individual users and is not bound by state statutes or laws governing water distribution or allocation.

Armstrong v. Westroads Development Co., 380 S.W.2d 529 (St.L. Ct. App. 1964) the court found that under the riparian doctrine, the right to use water from watercourses and lakes is limited to riparian owners, those owners of land in physical contact with the water.

Atchison, T. & S.F. Ry. v. Taylor, 87 F.Supp. 313 (E.D. Mo. 1949) defined floodwater, affirmed use of levees to repel floodwater, and affirmed the common enemy doctrine. The case involved liability for flood damage caused by the railway (the railway's liability for flood damage caused by railway right-of-way, which may be at odds with liability for passengers and customers of the railway). "The railroad need not go to extraordinary measures to escape liability of building railway in flood prone area. Landholders may repel surface water irrespective of resulting harm, so long as the measures taken are reasonable and prudent."

Avoyelles Sportsmen's League v. Alexander, 473 F.Supp. 525 (1979) suit was brought by plaintiff Alexander (Secy. of the

Army, chief military officer of the Corps of Engineers), alleging that land clearing activities by the defendants were in violation of various laws including the Federal Water Pollution Control Act. In response to the question posed by the plaintiff, the federal appellate court found that, "that section of the Federal Water Pollution Control Act making it unlawful to discharge any pollutant into the waters of the U.S. unless a permit is granted, is directed only at point sources of pollution. Land clearing equipment not commonly used in farming are point sources of pollution. Trees, leaves and vegetative matter constitute dredged or fill material for purposes of effectuating the Federal Water Pollution Control Act. Wetlands, within the meaning of the Federal Water Pollution Control Act, includes vegetation which grows thereon and thus permanent removal of wetland vegetation in the process of converting it to farmland is subject to permit program as established under the Federal Water Pollution Control Act."

Bailey v. United States By and Through U.S. Army Corps of Engineers, 647 F.Supp. 44 (1986) several property owners sued against the Corps seeking declaration that their property was not a wetland under jurisdiction of the Corps. The court held that "there is no requirement that an area be saturated at the surface to be characterized as a wetland. The fact that the wetlands may have been artificially created did not negate the Corps' power to assert regulatory authority over them."

Baker v. Mormanoch Ass'n. Inc., 25 N.J. 407, 136 A.2d 645 (1957) involved a jurisdictional question as to whether riparian owner has right to use entire watercourse or only portion overlying the stream bed which he owns. "Whether an inland body of water is public or private is determined by test of ebb and flow of the tide. Right to recreational use of a private lake is exclusively in owner of bed, and general public has no right to recreational use of such lake. When land is conveyed bounding upon lake or pond, grant extends only to water's edge. If it is a natural pond, but if it is an artificial pond, grant extends to middle of stream in its natural state."

Bartlett v. Hume-Sinclair Coal Mining Co., 351 S.W.2d 214 (K.C. Mo. App. 1961) involved riparian damage from strip mining. Action was for damages resulting from pollution of streams through coal mining operations. Coalmine tailings had, over time, flowed into streams and polluted the streams for downstream riparian use. "It is not necessary, in order to charge a person with liability for a nuisance, that he should be the owner of the property on which it is created, but it is sufficient that he created the nuisance."

Bass v. Taylor, 196 Tex. 522, 90 S.W.2d 811 (1936) involved diffused surface water, and floodwater. "Riparian landowners may construct levees to protect their lands from floodwaters, but not to obstruct the flow of the overflow waters, where these waters would flow, during times of ordinary floods, onto the lands of other riparian proprietors."

Beauchamp v. Taylor, 111 S.W. 609 (Mo. App. 1908) involved dams constructed in watercourses. "Any obstruction to the flow of water in a natural watercourse which results in injury to the property of another person, renders the one who created the obstruction liable for the damages, no matter how carefully the obstruction may have been made."

Behm v. King Louie's Bowl, Inc., 350 S.W.2d 285 (K.C. Mo. App. 1961) involved the modified common enemy doctrine of drainage of diffused surface waters. Diffused surface waters collected and were discharged by the upper owner(s) and, as result of their interference with natural drainage causing it to flow onto and flood property of lower owner. "Surface waters are common enemy which may be discharged onto lower owner provided it is not collected and discharged thereby causing damage to another. Upper owner may not discharge water in manner different than that which would have been usual and ordinary in natural watercourse drainage."

Behrens v. Scharringhausen, 22 Ill. App. 2d 326, 161 N.E.2d 44 (1959) the court found that "a landowner owns all percolating water which is found beneath his land and may use it in any manner he chooses."

Belveal v. H.B.C. Development Co., 279 S.W.2d 545 (K.C. Ct. App. 1955) the court held

that in the development or improvement of his land, a landowner may not destroy a spring which furnishes water to a natural watercourse which in turn would deprive lower riparian owners of the surface water flow in the stream.

Benson v. Chicago & Alton R.R. Co., 78 Mo. 504 (1883) the court defined what constitutes a watercourse. "There must be a stream usually flowing in a particular direction, though it need not flow continually. It must flow in a definite channel, having a bed, sides or banks, and usually discharge itself into some other stream or body of water. It must be something more than a mere surface drainage over the entire face of a tract of land, occasioned by unusual freshets or other extraordinary causes. It does not include water flowing in the hollows or ravines in land, which is the mere surface water from rain or melting snow, and is discharged through them from a higher to a lower level, but which at other times are destitute of water. Such hollows or ravines are not in legal contemplation watercourses."

Benson v. Morrow, 61 Mo. 345 (1875) involved the determination of navigability of streams. One of only two cases where a Missouri court has held that navigable waters are held by the state in trust for the public (Public Trust Doctrine). "Under the acts of Congress and the decisions of the United States Supreme Court (7 Wal. 272) the ancient doctrine distinguishing navigable and non-navigable rivers by their position above or below tide water, is done away with, and the Missouri River is a navigable stream," wrote the court. "And hence, as in other cases of navigable rivers, the proprietor of land on its banks owns only to the water's edge. The terms 'avulsion' on the one hand, and 'gradual and imperceptible accretion' on the other, may with propriety be dispensed with in speaking of alluvion formed by the Missouri River. An unnamed and undisposed of island in the Missouri River belongs to the United States and if alluvion forms thereto, connecting with another privately owned island, the private owner does not become the owner of the alluvion so formed. However, if alluvion forms from the owned

island to the nameless island, then the owner becomes entitled to ownership of the nameless island by accretion." See *State ex rel. Citizens' Elec. Lighting & Power Co. v. Longfellow*, 169 Mo. 109, 69 S.W. 374 (1902).

Bird v. Hannibal and St. Joseph Railway Co., 30 Mo. App. 365 (1888) involved artificial obstructions placed in a natural waterway resulting in flooding of another's property. Construction of embankment obstructing a natural waterway, with a defective and insufficient outlet causing overflow on to another riparian owner. "It makes no difference whether the overflow of the stream is from melting snow or from falling rains."

Blackburn v. Gaydon, 245 S.W.2d 161 (1951) involved floodwaters and the common enemy doctrine. Disallows dams, dikes, or other improvements to a property to ward off flood waters that cause the water to be collected and then cast in a concentrated form to the land of another in a manner in which the waters would not normally flow.

Blankenship v. Kansas Explorations, 325 Mo. 998, 30 S.W.2d 471 (1930) involved riparian damages from mine tailings being placed in a watercourse resulting in the filling of mill pond and loss of water power derived from mill pond. Failure of the mill pond owner to allow water to carry sludge from mill pond does not excuse liability of upper riparian from causing tailings to fill pond.

Blydenburgh v. Amelung, 309 S.W.2d 150 (K.C. Ct. App. 1958) involved the modified common enemy doctrine. An upper riparian may not collect diffused surface waters and divert it in volume onto the property of a lower riparian.

Boehmer v. Big Rock Creek Irrigation Dist., 117 Cal. 19, 48 P. 908 (1897) the court held that riparian ownership is linked to title of ownership of land. "Riparian lands do not cease to be riparian lands or lose associated riparian rights and riparian responsibilities with change in ownership."

Bollinger v. Henry, 375 S.W.2d 161 (Mo. 1964) involved surface waterways, comparative reasonableness use doctrine, and riparian rights. This case is a landmark riparian

rights decision. The right of a riparian owner in the water of a stream, in jurisdictions where the doctrine of riparian rights obtain, include "the right to the flow of the stream in its natural course and in its natural condition in respect to both volume and purity, except as affected by reasonable use by other proprietors."

Bollinger v. Mungle, 175 S.W.2d 912 (St.L. Mo. App. 1943) the court found that the pollution of groundwater with gasoline from a gas station, contaminating well water which was used for domestic supply by adjoining landowner, but separated by a roadway, is an act of negligence.

Borgman v. Florissant Dev. Co., 515 S.W.2d 189 (St. L. Mo. App. 1974) involved drainage water, drainways, and provided a definition of what constitutes and distinguishes a watercourse. A natural surface water channel or drainway may be defined as, "the conformation of the land such as to give to the surface water flowing from one tract to the other a fixed and determinate course, so as to uniformly discharge it upon the servient tract at a fixed and definite point. It does not seem to be important that the force of the water flowing from one tract to the other has not been sufficient to wear out a channel or canal having definite and well-marked sides or banks."

Bower v. Hog Builders, Inc., 461 S.W.2d 784 (Mo. 1970) the court applied private nuisance liability to polluted surface drainage water. The case stemmed from feedlot sewage lagoon effluent polluting land and livestock water supply on adjacent private property. Water contaminated from hog pen and lagoon sewage accumulated by upper owner on his property as result of upper's inaction, flowed onto lower owners land. Effluent contaminated lower owner's pond, stream, ditch, surface of land, and well water. Well water was used for domestic supply. "Reasonable use of property does not entail causing interference with another's reasonable use and enjoyment of their property."

Bradley v. County of Jackson, 347 S.W.2d 683 (1961) the court held that riparian rights

arise from ownership of land abutting water. Owners of property that about an artificial lake acquire littoral rights, to lake use for recreational and domestic purposes. Riparian rights arise from ownership of land abutting water and are incident of such ownership of "upland" regardless of ownership of submerged lands. Easements and conveyance of right-of-ways by owners to others, whose purpose is construction of an artificial lake, does not preclude use and enjoyment of the lake by owners whose property abuts waters edge.

Bradley v. Elsberry Drainage Dist., 425 S.W.2d 950 (Mo. 1968) the court determined that the power and authority of levee districts is similar to that of drainage districts with respect to acquisition of private property for public use, by eminent domain, as defined by state statutes.

Bratschi v. Loesch, 330 Mo. 697, 51 S.W.2d 69 (1932) the court held that "where a non-navigable stream of water constitutes dividing line between two tracts of property, absent reservation in deed showing contrary intent, possessor on each side owns to thread of stream. Where a change in the course of the stream forming the boundary between the properties is slow and gradual, the boundary line changes with the course of the stream, the thread of which continues to be the boundaryline."

Brill v. Missouri, Kansas and Texas Railway Co., 161 Mo. App. 472, 144 S.W. 174 (1912) the court held that "Riparian rights in a watercourse change if an artificial channel is substituted for a natural one, or is created under such circumstances as indicate that it is to be permanent and to be a watercourse the same as though it was created by nature, riparian rights attach to it. The fact that a watercourse is not ancient does not confer the right to obstruct it, and is not changed by the fact that it was at one time an artificially created channel which assumed the characteristics of a watercourse."

Brown v. H & D Duenne Farms, Inc., 799 S.W.2d 621 (Mo. App. 1990) concerned the use of levees to repel floodwaters and involved the common enemy doctrine. The law

that applies to surface waters also applies to overflow water. "A ditch may be a watercourse or drain ditch within the scope of rule that one may not obstruct a natural watercourse without liability for ensuing damages to others if ditch or channel serves purpose of natural drain or watercourse, even though ditch or channel was artificially constructed."

Brown v. Wilson, 348 Mo. 658, 155 S.W.2d 176 (1941) the court held that "Where a non-navigable stream of water constitutes the dividing line between two tracts of land, the possessor on either side, absent contrary restrictions or reservations in his deed, holds to the center of thread of the stream. Where a subsequent change in the course of the stream is by the slow and gradual process of accretion, the boundary line changes with the stream, entitling the one owner to whatever is added to his land by reason of accretion. Where the stream changes its course suddenly or in such manner as not to destroy the identity of the land between the two channels or to render it incapable of identification, the process is not one of accretion and the boundary line remains as it was before the change in the channel of the stream."

Burke v. Colley, 495 S.W.2d 699 (Spr. Mo. App. 1973) the court confirmed the recreational use of a riparian stream, i.e. Current River. Occupiers of land on the west side of the Current River brought suit against occupiers of land east of river, who had been removing gravel from that side of the river for a number of years, to quiet title to certain lands on the east side of the river. Court of Appeals held that the survey, failing to show that it commenced at a corner marker or was pursuant to statutory method, was incompetent and should not have been used. "Evidence and testimony by a surveyor offered no force with respect to boundaries and property where it is not based upon a government marker or legally established corner. A survey which fails to show that it originates at a governmentally established corner marker, or if the original marker is lost, is not reestablished pursuant to statutory methods, is incompetent and incomplete. When the United States surveyed

lands along the banks of nonnavigable streams and sold and conveyed such lands by subdivision, government patent conveyed in title to all lands lying between meander line and middle thread of river unless, prior to patent, government surveyed such lands as subdivisions or expressly reserved them if not surveyed."

Camden Special Road Dist. v. Taylor, 495 S.W.2d 93 (K.C. Mo. App. 1973) involved the use of levee to repel floodwaters, and the common enemy doctrine. Under the common enemy rule, a landowner may build on or alter the surface of his land to prevent surface water from coming upon his land from higher land and it does not matter that the embankments cause water to form ponds or collect on the lands of the upper owner.

Campbell v. Anderson, 866 S.W.2d 139 (Mo. Ct. App. 1993) the court applied the comparative reasonable use rule of drainage to floodwater. The suit involved the rechannelization of a creek by adjoining landowners. "Where rechannelization of creek creates temporary structure, and rule of reasonable use is applicable to surface water runoff providing that each possessor is legally privileged to make reasonable use of his land, even though flow of surface waters is altered and causes some harm to others, the interference is acceptable, until the harmful interference with flow of surface waters becomes unreasonable." See also *Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n.*, 859 S.W.2d 681.

Cappaert v. United States, 48 L.Ed.2d 523, 96 S.Ct. 2062 (1976) involved federal reserved rights and groundwater. "When the federal government withdraws its land from the public domain and reserves it for a federal purpose, the government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation. Also, in doing so, the U.S. acquires a reserved right in unappropriated water, which vests on the date of the reservation and is superior to the rights of future appropriators. The federal reserved water rights

doctrine applies to water in navigable and nonnavigable streams. [US Constitution, Art 1, § 8; and Art 4, § 3.] The implied reservation of water doctrine reserves to the government only that amount of water necessary to fulfill the purpose of the reservation of public land, and may include quantities of water to maintain or preserve items of scientific value or importance or objects of historical interest. The federal reserved water rights doctrine applies to both surface water and groundwater. The McCarren Act amendment does not require the United States to perfect its water rights in state court."

Camel-by-the-Sea v. Transportation Department, 95 F.3d 892 (1996) a U. S. court of appeals held that, "the environmental impact statement (EIS) prepared for a highway construction project in Southern California was deficient because it did not take into account wetlands produced in the construction area by earthquakes after the studies relied on by the agencies in the EIS were prepared."

Casanover v. Villanova Realty Co., 209 S.W.2d 556 (St.L. Mo. App. 1948) involved the drainage of diffused surface water, and the modified common enemy doctrine. A subdivision's surface water drainage scoured driveways, penetrated basement walls and left clay deposits on property of lower landowner. "A land owner may use his land in any lawful manner for any lawful purpose, and has the right to alter grade or slope of land in absence of contrary legal restriction. Alteration of grade and removal of ground cover imposes no liability on upper owner for resulting damages to lower owner since upper owner's land is above lower owner's prior to the change in grade. Common law treats surface waters flowing from higher ground to lower lands as common enemy and permits one to protect his property by whatever means available, not withstanding the owner of the higher land cannot unnecessarily collect surface water thereon and then cast it onto lower land. The pumping of water onto a lower lot from a higher tract and the pushing of loose earth onto another lot by means of machine grading are however acts of trespass. The flow of

surface waters, including mud and silt from the higher to the lower tract which damages the property of the lower constitutes trespass."

Chapman v. American Creosoting Co., 286 S.W. 837 (Mo. App. 1926) involved creosote contamination of ground and well water. The owner of a creosote plant is liable for pollution of and damages to a spring, well, and property caused by waste escaping from a pond of creosote onto the land of the lower and constitutes negligence on the part of the creosote plant owner.

Chemehuevi Tribe of Indians v. F.P.C., 489 F.2d 1207 (D.C. Cir. 1973) involved federal licensing. The court determined that steam power plants were outside federal jurisdiction, even if located on a navigable watercourse.

City of Blue Springs v. Central Development Ass'n., 831 S.W.2d 655 (1992) affirmed the non-severability of groundwater from the land and confirmed the application of the comparative reasonable use rule for percolating groundwater. The court held that "underground waters are assumed to be percolating unless proof of underground stream exists."

City of Canton v. Shock, 66 Ohio St. 19, 63 N.E. 600 (1902) the court held that municipalities are considered riparian owners for the purpose of public water supply.

City of Cape Girardeau v. Hunze, 314 Mo. 438, 284 S.W. 471 (1926) involved eminent domain and reasonable use under the riparian rights doctrine. Municipalities may be considered a riparian proprietor. The city acquired the use of a creek as sewer outlet by condemnation easement. Sewage in the creek flowed through the farm of a downstream riparian causing pollution to the water and his land. "Owners of land through which a natural watercourse flows are not absolute by mere riparian owners, and must endure without remedy such imparities and pollution as find their way into the stream from natural wash and drainage of city situated on its banks and of lands of other upper riparian owners."

City of Chillicothe v. Bryan, 77 S.W. 465 (Mo. App. 1903) involved city sewage effluent pollution of livestock water supply. The

court held that "A person who permits a city to construct the outlet of a sewer on his land can not obstruct the outlet and inflict damage on the persons connecting their residences with the sewer, even on his and the city's representations that he has the right to do so. Though the sewer constituted a nuisance and was constructed under the promise that it would not be a nuisance. A city does not acquire by prescription the right to maintain a sewer on a person's land because it had maintained it for a period of over ten years, where such maintenance was by permission alone."

City of Franklin v. Durgee, 71 N.H. 186, 51 A. 911 (1901) involved the rejection of protection of landowner from drainage of diffused surface waters by unreasonable modification to the natural flow.

City of Hamilton v. PWSO No. 2 of Caldwell County, 849 S.W.2d 96 (1993) the court determined that under the terms of a contract signed by the city and the water district, the city had the authority to increase rates to be paid by the district to the city on the basis of demonstrable increase in costs by the city. "Proper water supply is a commodity most essential to health and welfare of population and so engages paramount police power of the state. Acquisition or construction by city of water works is exercise of public purpose. The terms of RSMo. 250.120, ¶1, are mandatory and not merely directory."

City of Hardin v. Norborne Land Drainage Dist., 360 Mo. 1112, 232 S.W.2d 921 (1950) new levee constructed by drainage district was found not to change the original intent of levee district plans, nor provide new benefits, but rather sought to continue protection theretofore furnished by the original levee until subsequent external conditions rendered it insufficient in height and strength. "The construction of new levee is found to be simply maintenance and preservation of old levee, and falls within the statutory powers granted to the levee district board of supervisors. Surface water is a common enemy and each land proprietor may ward it off though by doing so he turns it on his neighbor. A drainage district is a governmental agency exercising police pow-

ers and as such may fend off surface waters as a common enemy, in the protection of its own landowners, though water be turned on land of others outside the district."

City of Harrisonville v. W.S. Dickey Clay Mfg. Co., 289 U.S. 602 (1933) the city discharged sewage disposal plant effluent into a stream, causing damages to the property of a downstream owner. The city was found liable for nuisance to downstream owner and for depreciation in value of his property because of the nuisance.

City of Springfield v. Mecum, 320 S.W.2d 742 (Spr. Mo. App. 1959) the court held that public navigation extends to water's edge. The city constructed a dam and impounded waters of a river into an artificially created lake. Before creation of the dam the waters of the river were public waters, the submerged area of its channel was a public highway for travel and passage by boating and wading and available to the public by unrestricted lawful means. After the construction of the dam and impoundment of waters forming the lake, the city passed an ordinance limiting maximum horsepower of boat motors allowed on the lake. The court found that, "the city acted reasonable and within its police powers to do so." The court also held that, "owners of land adjacent to the lake can not prevent the public from utilizing its recreational interests attached to the water up to the water's edge, regardless of the location of the original watercourse."

City of Tacoma v. Taxpayers of Tacoma, 357 U.S. 320 (1958) the court determined that federal licensing authority on a navigable watercourse supersedes state statute.

Clark v. City of Springfield, 241 S.W.2d 100 (Spr. Mo. App. 1951) involved the pollution of diffused surface waters by city sewer overflow onto private property. Surface water is regarded as a common enemy and persons may guard against it or divert it from their premises, but the rights given under the "common enemy" doctrine must be exercised within reasonable limits and not recklessly, so as not to needlessly injure servient tenements. "One should not artificially impound or col-

lect surface water and cast it in increased and destructive quantities onto servient estates to their damage. Discharge of sewage upon a person's premises may constitute a nuisance. Home owners are entitled to comfortable use and enjoyment of their homes without interference from a nuisance."

Colbert v. Nichols, 935 S.W.2d 730 (1996) the court enjoined the defendant from blocking a surface water drainage ditch in which the plaintiff held prescriptive usage rights. An upper landowner with prescriptive drainage rights onto defendant's lower property brought suit to enjoin the lower landowner from obstructing the flow of a drainage ditch. The lower owner brought counter suit seeking damages for alleged trespass and destruction of property. The court held that "the upper landowner did have the prescriptive right to drain water into a drainage ditch crossing the property of the lower landowner. The lower property owner could alter the flow in the ditch or change its direction of flow across his land but not to the extent that it would cause less water to travel through the ditch." An injunction by the lower court was upheld against lower landowner from erecting an obstruction on his land because it correctly followed the doctrine on reasonable use in that the obstruction interfered with the upper property owner's easement and would cause flooding on his land.

Connecticut v. Massachusetts, 282 U.S. 660 (1931) involved interstate surface water flow between riparian states. "The determination of the private individual relative rights by the federal courts when relief is sought by contending states on behalf of its citizens is not dependent upon the same considerations, and is not governed by the same rules of law that apply in such states which are governed by prior appropriation rules. Such disputes are to be settled on the basis of equality of right, but it does not follow that there must be an equal division of the waters of an interstate stream among the States through which it flows. The principles of right and equity shall be applied with regard to the equal level on which States stand under the Constitution.

Municipal laws relating to like questions between individuals does not have controlling weight."

Conran v. Girvin, 341 S.W.2d 75 (Mo. En Banc 1961) the court found that riparians have the same rights in navigable waters as they do in nonnavigable waters with respect to stream bed and ownership use to the low water level which abuts their lands. Title to the beds of navigable streams is in the respective states, unless granted away, subject only to the reservation and stipulation that such streams shall forever be and remain public highways, with the right of Congress to regulate commerce on them. A state may determine to what extent a riparian proprietor will be given rights over lands under navigable waters. A riparian proprietor in the state has title to the shores of navigable streams down to the low-water mark, and therefore the property line between a riparian owner, on a navigable stream, and the state is the low-water mark, subject to certain rights in the public to navigation. "Mean low water" in a navigable stream is approximately the middle point between the upper and lower extremes of low water. The property title of a riparian owner extends to the low-water mark, in view of the fact that a riparian owner is entitled access to the waters. Accretion is the gradual increase of riparian land causing what before was covered by water to become dry land.

Cooley v. Golden, 117 Mo. 33, 23 S.W. 100 (1893) dealt with streambed ownership and riparian rights in stream beds. The case stemmed from competing claims of land ownership resulting from the flood of 5 July, 1867, when the Missouri River, "...at a very high stage of water, suddenly cut through the narrow neck of land..." and "...run all its water through said newly made cut, and abandoned its old bed in the bend...". The court noted, "The peninsula of land so cut off by said avulsion and thrown east of the Missouri River is called 'McKissick Island', and continues to be a portion of Nebraska." The court said that, landowners adjacent to a navigable stream do not have ownership rights that extend to the middle of the stream, but rather only to the

water's edge. When either a navigable or non-navigable stream suddenly changes course, creating a new channel, the owner of the shore does not acquire title to the abandoned channel. Land which abuts a large navigable river, such as the Missouri River, will pass in title only and only to the water's edge, but will vest in the state title to land beneath the water. Where an island forms in a navigable river and by accretion is united to the mainland, the owner of the mainland is not entitled to that island, but only to the accretions formed onto his land. When a navigable river suddenly changes its course, the owner of the shore does not acquire title to abandoned channel. The court cited the cases of *The Daniel Ball*, 10 Wall. 555, 563; *Naylor v. Cox*, 21 S.W. 589; *Rees v. McDaniel*, 21 S.W. 913; and *Nebraska v. Iowa*, 143 U.S. 359 in its reasoning.

Corrington v. Kalicak, 319 S.W.2d 888 (St.L. Ct. App. 1959) the court determined that liability for damages for causing overflow of water of a natural watercourse by reason of an obstruction is not based upon intention to obstruct the water nor the mere impounding of waters but rather on the ground that obstruction causes water to overflow, encroach upon and inflict special damage to property of another, and agency obstructing the flow and causing the overflow is liable for misfeasance in an action of trespass whether impounding waters is intentional or accidental or whether overflow is caused by negligence or without negligence.

Curd v. Missouri Clean Water Commission 586 S.W.2d 58 (1979) the court held that the Missouri Clean Water Commission does not have authority to determine riparian rights with regards to water purity.

Dardenne Realty Co. v. Abeken, 232 Mo. App. 945, 106 S.W.2d 966 (1937) the court held that "a 'water course' is a stream or brook having a definite bed or channel for conveyance of water, which may include surface water, which loses character as such when it enters the channel, but water which ceases to remain a channel and spread out over surface of low lands and runs in different directions without

definite channel ceases to be 'stream' or 'water course', something more than a mere surface draining, swelled by freshets and melting snow being required to constitute a 'branch' or 'stream'. Riparian rights may be acquired by prescription, notwithstanding that the watercourse is entirely artificial."

DeBok v. Doak, 188 Iowa 597, 176 N.W. 631 (1920) addressed the reasonable use rule applying to percolating groundwater. "Use of percolating groundwater is permitted if such use is reasonable and for the benefit of the overlying estate. The upper landowner is not permitted to waste underground waters if they run in a well defined stream and supply a spring."

Divelbiss v. Phillips Petroleum Co., 272 S.W.2d 839 (K.C. Ct. app. 1954) involved riparian damage from petroleum releases from a petroleum pipeline. An oil company permitted petroleum products to be discharged at a pumping station into a small creek that crossed lower owner's property, causing pollution of livestock water supply. The polluter of the surface waterway was found liable under nuisance laws for the value of the cows which died, the loss of the value of milk from cows which died, the loss of the value for contamination of milk, the loss of the value for depreciation of surviving cows, and the loss of profits from lowered milk production of the surviving cows.

Doemel v. Jantz, 180 Wis. 225, 193 N.W. 393 (1923) the court determined that navigability of a stream, for easement of public travel, extends to the water's edge and expands and contracts as stream level rises and falls.

Dudley Special Road Dist. v. Harrison, 517 S.W.2d 170 (Spr. Mo. App. 1974) the court distinguished watercourses from other types of surface waters. "A natural watercourse is characterized by a stream usually flowing in a particular direction, though it need not flow continually, having a definite channel, having a bed, sides or banks and usually discharging itself into some other stream or body of water. There must be something more than a mere surface discharge over the entire face of a tract of land, occasioned by unusual freshets, and not just limited to a hollow or ravine

which is the sole result of mere surface water from rain or melting snow. It is unlawful for a downstream landowner to obstruct a creek which was a natural watercourse so as to cause the waters to overflow, and encroach upon and inflict damage to the land of the upstream landowner. Liability for damages resulting from obstruction is not based upon intent but rather the fact that the obstruction caused damage as a result of overflow waters. Missouri statute which provides for drainage for agricultural or sanitary purposes, 1969 RSMo. 244.010, does not give downstream landowners the right to obstruct a natural watercourse to the damage of the upstream landowners who, under the same statute, had the right to drain their land into the natural watercourse."

Dunham v. Joyce, 129 Mo. 5, 31 S.W. 337 (1895) involved an upstream riparian owner's right to maintain a surface water flow onto a lower riparian's land. A lower landowner dammed a ditch on his land, which an upper landowner used to drain his land. "The mere fact that lower landowner had previously permitted surplus water from upper to flow unabated within ditch across his land does not in and of itself create an easement."

Economy Light Co. v. United States, 256 U.S. 113 (1921) further defined historically navigable watercourses. "Artificial obstructions of navigable waters, rendering them non-navigable in fact, do not render them non-navigable under the law. A river may be navigable in law though it contain natural obstructions and not open to navigation at all seasons or stages of water. A decision of a state supreme court holding that a river is non-navigable does not bind the United States to the holding if it was not a party to the suit. A river having actual navigable capacity in its natural state, and capable of carrying commerce among the states is within the power of Congress to preserve for purposes of future transportation even though the river is not used for commerce and is incapable of being used for commerce as a result of artificial obstructions."

Edmondson v. City of Moberly, 11 S.W. 990 (Mo. 1889) involved city sewage effluent

pollution of stream. "A city authorized by its charter to build and maintain a sewage system can not under subsequent city ordinance arrange the drains so as to create an unnecessary nuisance, injurious to private rights of downstream property holders."

Elder v. Delcour, 364 Mo. 835, 269 S.W.2d 17, 263 S.W.2d 221, 241 Mo. App. 839 (MoSC 1954) involved landowner and public rights in riparian streams, right of the public to navigate upon watercourses, and public rights to floatable streams. "The waters of navigable streams are 'public highways' and the submerged area of a stream channel which crosses private property may be accessed by the public for purposes of travel by floating or wading, for business or pleasure."

Evans v. Massman Const. Co., 122 S.W.2d 924 (Mo. App. 1938) involved dams in navigable streams. In the absence of the protection of the authority of government, or the legal authority of the state or one of its political subdivisions, no one has the right to dam up or obstruct a [navigable] running stream and thereby cause it to overflow its banks to the damage of riparian owners.

F.P.C. v. Niagara Mohawk Power Corp., 347 U.S. 239 (1954) involved federal jurisdiction and riparian power company rights. The court held that "the federal Water Power Act of 1920 did not abolish private proprietary right, existing under state law, to use waters of a navigable stream for power purposes. Water rights claimed by a licensee are usufructary rights to use the water for the generation of power, as distinguished from claims to the legal ownership of the running water itself and constitute a form of real estate known as corporeal hereditaments. There is a dominant servitude, in favor of the United States, under which private persons hold physical properties obstructing navigable waters of the U.S. and all rights to use the waters of those streams, but the exercise of that servitude, without making allowances for pre-existing rights under state law, requires clear authorization. Riparian water rights, like other real property rights, are determined by state law."

F.P.C. v. Oregon, 349 U.S. 435 (1955) involved commerce clause powers, and state regulatory powers. The court held that the commerce clause of the U.S. Constitution supersedes state regulatory authority.

F.P.C. v. Union Elec. Co., 381 U.S. 90 (1965) involved federal licensing authority on nonnavigable tributaries where navigation would be affected on the navigable main channel. "The commerce power of Congress encompasses the interstate transmission of electricity without regard to federal control of tributary streams and navigation. The language invokes full Congressional authority over commerce not merely the regulation of navigation or water commerce."

Fansler v. City of Sedalia, 176 S.W. 1102 (Mo. App. 1915) involved city sewer effluent pollution of livestock water supply. "A city constructing a sewer emptying into a stream above the land of a riparian owner does not thereby commit a trespass on the land, though the flow of sewage with the waters of the stream may invade a substantial right of the owner. Maintenance of that sewer, by the city, for more than ten years does not afford the city by prescription of right to maintain the nuisance to the lower owner."

Farrar v. Shuss, 221 Mo. App. 472, 282 S.W. 512 (K.C. App. 1926) involved protection from diffused surface water. Unwanted diffused surface water may be warded off and onto another at the property line but not at a location that causes the water to pool and thereby extend backup onto the property of another.

Finley v. Teeter Stone, Inc., 251 Md. 428, 248 A.2d 106 (1968) involved "reasonable use" rule applying to percolating groundwater. "The use of percolating groundwater is permitted if such is reasonable in nature and is for beneficial uses to the overlying estate. 'Subterranean waters' are generally considered to be underground streams or percolating waters. To be classified as an 'underground stream' water must flow in a definite and fixed channel whose existence and location are either known or may be ascertained from indications on the surface of the land or by other

means without subsurface excavations to determine such existence and location. 'Percolating waters' are those which ooze, seep or filter through soil beneath the surface without a definite channel or in a course that is unknown or not discoverable from surface indications without excavations for that purpose, and the fact that they may, in their underground course, at places come together so as to form veins or rivulets does not destroy their character as 'percolating waters'. Unless it can be shown that underground water flows in a defined and known channel, it will be presumed to be percolating water. The pumping of large quantities of water, incident to mining or quarrying operations, is both reasonable and necessary. Interference with support provided by water is not subject to same rules of absolute liability that are imposed on a landowner who deprives his neighbor of natural support provided by soils and other more solid materials."

First Iowa Hydro-Elec. Coop., v. F.P.C., 328 U.S. 152 (1946) involved federal regulatory powers. Under the authority of the U.S. Constitution, the authority of the United States to govern interstate commerce, is authorized to make rules preempting state law, a power which is wholly independent of the question of private ownership. A federal agency which is authorized by congress to develop hydro-electric projects on waters subject to the commerce power does not have to submit to state rules and regulations as to how the water can be used.

Foncannon v. City of Kirksville, 88 Mo. App. 279 (1901) involved city sewage discharges. The court affirmed that, "a third class city has power to construct sewers." In this case, the city emptied sewage into a ditch that traversed the land of a lower owner, which the court deemed as a permanent appropriation. The court held that "the city was liable for damage caused; the fact that it proceeded in directing such construction was irregular did not relieve it from damages resulting from the nuisance it caused as a result of the construction of a disconnected sewer system." The court cited *Smith v. Sedalia*, 152 Mo. 283.

Frank v. Environmental Sanitation Management, Inc., 687 S.W.2d 876 (Mo. 1985) involved landfill leachate in stream resulting in pollution of livestock water. In a nuisance action, evidence that leachate had escaped landfill, polluting stream, killing aquatic life, and preventing use of stream by downstream farmers was sufficient to support finding that landfill owner's use of land in a manner that created downstream leachate pollution was an unreasonable use of the land.

Frazier v. Brown, 12 Ohio St. 294 (1861) the court held that "the landowner owns all percolating water which is found beneath his land and may use it in any manner he chooses, including sale of the water."

Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1 (1824) a landmark federal case which involved commerce and navigation. The authority to regulate commerce between states is vested with the federal government through the commerce clause of the U.S. Constitution. Commerce that is completely internal to a state may be regulated wholly by the state. Congressional power to regulate commerce is unlimited except as prescribed by the Constitution. Regulating power over commerce between states does not stop at jurisdictional lines of states, and may be exercised wholly within a state. When the state law and federal law conflict on this subject, federal law must be supreme. Any matter that affects interstate commerce is within the power of Congress.

Gibson v. United States, 166 U.S. 269 (1897) involved a riparian owner's right of access to watercourse. The U.S. Supreme Court determined that riparian ownership on navigable waters is subject to the obligation to suffer the consequences of an improvement of the navigation, under an act of Congress, in the exercise of the dominant right of the government in protecting navigation.

Gilman v. Philadelphia, 70 U.S. (3 Wall.) 713 (1865) involved navigational servitude and federal power to restrain interference with navigation. The court held that "the power to regulate commerce comprehends the control for that purpose, and to the extent necessary,

of all the navigable waters of the U.S. which are accessible from a state other than those on which they lie; and includes, necessarily, the power to keep them open and free from any obstruction to their navigation, imposed by the states or otherwise. It is for Congress to determine when its full power shall be brought into activity, and as to the regulations and sanctions which shall be provided. Congress may impose whatever it shall deem necessary, by either general or special laws. It may regulate all bridges over navigable waters, remove offending bridges, and punish those who shall thereafter erect them."

Goll v. Chicago & Alton Railway Co., 271 Mo. 655 (1917) involved surface water overflows from streams and rivers. The court held that "overflow water from streams and rivers is surface water. The owner or person in possession has the right to prevent the waters of the Missouri River from overflowing his land, provided he does not by his own embankment or other construction on his land change the channel of the river."

Gray v. Schriber, 58 Mo. App. 173, (St.L. App. 1894) involved drainage and watercourses. The court held that "under statute, the owner of agricultural lands is permitted to secure proper drainage for his land for agricultural purposes by constructing drains into any natural depression which carries the water into a natural watercourse, with the owner of the adjoining lower tract not having the right to obstruct the depression so as to prevent the drainage."

Green Bay & Miss. Canal Co. v. Patten Paper Co., 172 U.S. 58 (1898) a federal court confirmed that federal jurisdiction preempts conflicting state water rights statutes.

Greisinger v. Klinhardt, 321 Mo. 186 (1928) involved recreational use of lakes and streams. A riparian has the right of access to the entire surface of an artificial watercourse, which became a natural watercourse with passage of time. An artificial lake, created from a navigable stream, retains public recreational rights.

Hackensack Water Co. v. Nyack, 289 F. Supp. 671 (S.D.N.Y. 1968) involved interstate

water and individual riparian rights. This action, a New Jersey water company against a New York municipality, was for declaration of right to damages because of the municipality's upstream diversion of water. Under both New Jersey and New York common law, upstream riparian owner may not unreasonably divert or appropriate waters of flowing streams, and riparian owners must restore all flowing waters to stream subject only to reasonable allowance for domestic use and consumption. "Diversion," as applied to watercourses, is "the taking of water from a stream without returning it for the use of lower riparian owners." An owner contiguous to natural watercourses may withdraw water from the watercourse for agricultural, industrial or other uses on his land, provided he returns it in substantial volume to the watercourse stream. All proprietors of stream have equal right to use water and share in the benefits gained from such use. "The question of what constitutes reasonable use of a natural watercourse by riparian owner is generally one of fact, but whether undisputed facts and necessary inferences therefrom establish an unreasonable use is a question of law. Among factors to be considered in determining reasonability of use of water includes the use to which the water is put, amounts required by the various users, and existence of alternative sources of water supply." The approval of a water diversion by the New York Water Resources Commission does not bar subsequent claims for compensation for damages suffered by downstream users. Artificially increased stream flow is a factor that must be considered when determining whether upstream owner's use is reasonable. A grant by New York to divert water without providing compensation to lower riparian owner (N.J. water company) is an unconstitutional taking of the lower riparian owner's property.

Haferkamp v. City of Rock Hill, 316 S.W.2d 620 (1958) involved drainage water and the modified common enemy doctrine. Under the common enemy doctrine, stated in its extreme form is that "as incident to his right to use or own property as he pleases, each

landowner has an unqualified right, by operations on his own land, to fend off surface waters as he sees fit without being required to take into account the consequences to other landowners, who have the duty and right to protect themselves as best they can."

Hahn v. Dawson, 134 Mo. 581, 36 S.W. 233 (En Banc 1896) the court determined that riparian owners do not take title to islands formed in navigable waters.

Haith v. County of Atchison, 793 S.W.2d 151 (Mo. App. 1990) the court examined drainage waters subject to common enemy rule. The court held that "Missouri follows a modified 'common enemy doctrine' in respect to surface waters, under which each landowner has an unqualified right to fend off surface waters, however, this does not include the unnecessary collection of surface waters and subsequent discharge at one place, thereby creating damage to his neighbor. A 'natural watercourse' is a living stream with defined banks, channel and bed, though it need not run with water continuously, it must be fed from other and more permanent sources than mere surface water. Ditches constructed to drain off surface water are not themselves 'watercourses', which may be legally obstructed, by both fact and law, by the owner, but absent that the ditch is fed by any source of water other than surface water."

Hanlin v. Burk Bros. Meat & Provision Co., 174 Mo. App. 462, 160 S.W. 547 (1913) involved riparian damages from pollution of a stream resulting from slaughterhouse operations. In an action for damages for polluting a stream across lower owner's land by emptying of offensive fluids into the stream from a meat packing plant, the measure of damages to the lower owner was not the depreciation in the market value of his land, but damages for the loss of the comfortable use or rental value of his property and special damages thereby directly resulting from the act.

Hansen v. Gary Naugle Constr. Co., 801 S.W.2d 71 (Mo. 1990) involved drainage waters subject to common enemy rule and confirmation of the modified common enemy rule. The modified common enemy doctrine defeats

trespass and nuisance causes of action by lower owner for damages caused by surface water runoff unless lower owner shows that upper owner diverted flow of surface water runoff out of its natural drainway or caused accumulation of surface water runoff in such a way as to permit its discharge to exceed capacity of natural drainway. An upper landowner may collect surface water on his property in artificial drains and precipitate it into natural drainway channel even though in doing so the flow of the surface water in its natural channel onto the lower lands may be increased and accelerated.

Happy v. Kenton, 362 Mo. 1156, 247 S.W.2d 698 (1952) involved drainage water, common enemy doctrine, and natural watercourses. The court held that "one may not obstruct a natural watercourse without liability for ensuing damages to others, but one may treat surface waters as common enemy and obstruct their flow without liability so long as it is done reasonably and not recklessly or negligently. A natural drainway, improved by artificial ditch, which follows exact course of natural drainway under circumstances indicating that ditch is to be permanent, which combination thereafter meets requirements of natural watercourse, should be treated as a natural watercourse."

Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955) involved the reasonable use doctrine. Each riparian owner is entitled to make a reasonable use of surface water.

Harvy Realty Co. v. Borough of Wallingford, 111 Conn. 652, 150 A. 60 (1930) the court held that riparian rights are inherent with riparian lands, therefore, riparian owners can not convey riparian rights to others separate from the land.

Haynor v. Excelsior Springs Light, Power, Heat and Water Co., 129 Mo. App. 691, 108 S.W. 580 (K.C. App. 1908) involved the pollution of a stream and domestic water supply well by petroleum products. The owner of a dominant estate has a right to use a stream flowing by his land to that of a servient proprietor in such a manner as not

to interfere with its use by the servient owner, but has no right to pollute the stream which results in injury to a servient estate.

Heins Implement Co. v. Mo. Hwy. & Trans. Comm'n., 859 S.W.2d 681 (Mo. 1993) the court re-defined the difference between floodwaters and drainage waters, and overturned the modified common enemy doctrine in favor of comparative use reasonableness doctrine. "The Missouri Supreme Court adopts rule of reasonable use, rather than common enemy doctrine, to govern disputes involving diversion of surface waters, as rule most likely to promote optimum development and enjoyment of land, while ensuring equitable distribution of costs among competing interests at hand. Reasonableness of interference with flow of surface waters under rule of reasonable use is question of fact, to be determined in each case by weighing gravity of harm to plaintiff against utility of defendant's conduct. Reasonableness is the vital concept of the common law (*City of Franklin v. Durgee*) and already governs the rights of users of watercourses, underground streams, and underground percolating waters (*Bollinger v. Henry*, *Higday v. Nickolaus*)." See also *Campbell v. Anderson*, 866 S.W.2d 139.

Higday v. Nickolaus, 469 S.W.2d 859 (K.C. Ct. App. 1971) a landmark Missouri case addressing groundwater allocation, percolating groundwater, comparative reasonableness use doctrine, and underground streams. The court rejected the rule of absolute ownership of percolating groundwater in favor of the reasonable use rule. "An underground stream is defined as water that passes through or under the surface in a definite channel or one that is reasonably ascertainable. Percolating waters include all waters which pass through the ground beneath the surface of the earth without a definite channel and not shown to be supplied by a definite flowing stream. They are waters which ooze, seep, filter and otherwise circulate through the interstices of the subsurface strata without a definable channel, or in a course that is not discoverable from surface indications without excavation for that purpose. The rule is that all underground waters are presumed to be percolating and therefore the burden of proof is on

the party claiming that a subterranean stream exists. The rule of reasonable use should apply to subterranean percolating waters. It is that legal standard, in absence of a statutory expression, which existing water resources may be allocated most equitably and beneficially among competing users, private and public. The application of such a uniform legal standard would also give recognition to the established interrelationship between surface and groundwater and would, therefore, bring into one classification all waters over the use of which controversy may arise. Under the rule of reasonable use as stated, the fundamental measure of the overlying owner's right to use the groundwater is whether it is for purposes incident to the beneficial enjoyment of the land from which it is taken" wrote the court.

Hobart-Lee Tie Co. v. Grabner, 206 Mo. App. 96, 219 S.W. 975 (1920) involved non-navigable waters and ownership of stream bed on the Gasconade River. If a stream is non-navigable in the sense that the state or government has not the title to the river bed, then the adjoining landowners' property ownership runs to the thread of the stream and such ownership is subservient only to the rights of the public to use the stream as a highway upon which to float logs, ties, and such other merchandise as the volume of water will carry, and to tie up to the banks for repairs and to do anything incidental to travel. In a case where land is titled to a riparian owner, and part of it is washed away and it is afterwards restored by accretion, the riparian owner acquires the title to the restored land. The right to use a stream as a highway for floating logs, the adjoining owners' ownership running to the thread of the stream, does not include the right to land and haul logs or ties over the privately owned land of a riparian.

Hulshof v. Noranda Aluminum, Inc., 835 S.W.2d 411 (Mo. App. 1992) involved an industrial discharge containing wastes and chemicals which overflowed a drainage ditch resulting in the destruction of crops and the contamination of land on a downstream farm. The court enjoined the companies from dis-

charging effluent from industrial park into public drainage ditch that crossed lower owner's farm. Evidence presented sustained the claim that the industrial wastewater and discharges placed into the drainage ditch adversely affected and damaged the crops and soil of the lower owner's farm.

Illinois v. City of Milwaukee, 406 U.S. 91 (1972) involved federal common law and water pollution. Pollution of interstate navigable waters, Lake Michigan, by a political subdivision of another state is actionable under the laws of the United States. Federal common law applies to air and water in their ambient or interstate aspects. The application of federal common law to abate the pollution on interstate or navigable waters is not inconsistent with federal enforcement powers. While state environmental quality standards and federal environmental protection statutes may be relevant, but not conclusive sources of federal common law, they do not necessarily form the outer limits of such law.

Ingram v. Great Lakes Pipe Line Co., 153 S.W.2d 547 (1941) involved the destruction of a spring because of blasting and pipeline construction. In an action against a pipeline company and its contractors for destruction of a spring located on private property by blasting a ditch for the laying of a pipeline, the company was found liable for damages suffered by the property owner.

Inter-River Drainage Dist. v. Ham, 275 Mo. 384, 204 S.W. 723 (1918) the court determined that only a landowner, in the protection of his own property, may ward off floodwaters. The court held that drainage districts are not considered landowners.

Jacobs v. Frangos, 329 S.W.2d 262 (St.L. Mo. App. 1959) involved modifications to a stream bed which resulted in erosion damage to another's property. One may not obstruct or divert natural flow of stream without liability for ensuing damage to others.

Jones v. Conn, 39 Ore. 30, 64 P. 855 (1901) the court held that tracts of land contiguous to riparian land are to be treated as enjoying a riparian status if owned by a single owner,

regardless of when the tracts of riparian land were acquired.

Jones v. Hannovan, 55 Mo. 462 (1874) the court held that water which is not part of an artificial or natural watercourse or lake is diffused surface waters.

Jones v. Oz-Ark-Val Poultry Co., 228 Ark. 76, 306 S.W.2d 111 (1957) the Arkansas court held that the reasonable use rule of use of groundwater allows land owner to use water with regard to his neighbors needs, while the "eastern correlative rights rule" allows land-owner use of percolating groundwater when beneficial to the overlying estate. The reasonable use rule applies to water rights of riparian owners and to true subterranean streams and to subterranean percolating waters. "Where two or more persons own different tracts of land, which are under laid by porous material extending to and communicating with them all, and which are saturated with water moving with more or less freedom therein, each person has common and correlative right to use the water on his land, to the full extent of his needs, if common supply is sufficient, and to the extent that reasonable share of supply is so scant that use by one will affect the water supply of others."

Joplin Consol. Mining Co. v. City of Joplin, 124 Mo. 129, 27 S.W. 406 (1894) involved riparian usage and the potential for city sewage effluent to pollute ore washing water. "The proprietor of land through which a stream flows cannot insist that the water shall come to him in the natural pure state. He must submit, and that, too, without competition, to the reasonable use of it by upper proprietors, and he must submit to the natural wash and drainage coming from towns and cities."

Kansas v. Colorado, 206 U.S. 46 (1907) the State of Kansas brought suit to restrain the State of Colorado from diverting the waters of the Arkansas River to irrigate Colorado farmland, thereby preventing its natural undiminished in quantity and quality flow into Kansas. The United States filed a petition claiming that the reclamation of arid lands was one of the powers granted to the federal govern-

ment. The court held that "no such power was granted by the Constitution and that Kansas was not deprived of the beneficial effects of a flowing stream." The court further held that "the federal government is one of the enumerated powers of the U.S. Constitution, that it has no inherent powers of sovereignty, that the manifest purpose of the Tenth Amendment to the U.S. Constitution is to put beyond dispute that the proposition that all powers not granted are reserved to the people, and that if further powers ought to be possessed by Congress then they must be obtained by a new grant of powers from the people. While Congress has general legislative jurisdiction over the Territories and may control the flow of waters in their streams, it has no power to control a like flow within the limits of a State except to preserve or improve the navigability of the stream, the full control over those waters being vested in the State. While a right to present relief is not proved and this suit was dismissed, it was done so without prejudice to the right of Kansas to initiate new proceedings when it determined that, through an increase in the depletion of the Arkansas River by Colorado, the substantial interests of Kansas were being injured to the extent of destroying the equitable apportionment of benefits between the two States."

Keener v. Sharp, 95 S.W.2d 648 (Mo. App. 1936) involved watercourses, overflow waters, floodwaters, use of levees, surface waters, lakes, common enemy doctrine and the artificial impoundment of a watercourse which resulted in damage to adjoining land due to inundation of backwater. "A lake is an inland body of water of considerable size, occupying a natural basin or depression in the earth's surface below the ordinary drainage level of the region. Whether a sheet of water is to be classed as a lake, or marsh, swamp or bog, it is necessary to take into account the comparative depth or shallowness of the water, its permanence or liability to dry down and refill according to season, and the main source of supply, whether streams or springs or surface drainage."

Keener v. Sharp, 341 Mo. 1192, 111 S.W.2d 118 (1937) involved surface water,

common enemy doctrine, overflow waters, natural streams and the characteristics which further identify a body of surface water as a lake. "Surface water is a common enemy," wrote the court. "Waters overflowing the banks of a river during a flood or freshet and spreading out over the bottom lands is 'surface water' which an owner can ward off his land and throw on land of adjoining owner. A natural stream can not be dammed up nor the waters from its beaten path or bed diverted to the damage of property without compensation. A 'water course' is a stream or brook having a definite channel for the conveyance of water which may include surface water which loses its character as such when it enters the channel, but water which ceases to remain in the channel and spreads out over surface lowland and runs in different directions without definite channel ceases to be a 'stream' or 'water course,' something more than a mere surface draining, swelled by freshets and melting snow, being required to constitute a 'branch' or 'stream.' A winding bayou, 10 to 12 feet in depth, connecting lake with river and having well defined banks and channel, and containing running water most of the year, the volume depending on the rainfall and stage of the river, is a 'natural water course' and water while confined in the channel was not 'surface water'. Water of lake which was 2 to 3 miles long and about one-half mile wide, with depth varying from 18 inches to 7 feet, except in time of high water, with well-defined banks and basin and fed by rainfalls upon adjacent land as well as water from both north and south by Mississippi River, could not be classed as 'surface water,' although it became dry on rare occasions."

Kellogg v. City of Kirksville, 132 Mo. App. 519, 112 S.W. 296 (1908), 149 Mo. App. 1129 (1910) involved city sewage effluent pollution of domestic and livestock water supply. Where a city collects its sewage, and discharges it in a volume into a stream, resulting in damage to the property of a riparian owner, the riparian owner may recover damages for a permanent injury to the property, and the depreciation in the value of the land caused

by the nuisance is a proper element of the damage.

Kelso v. C.B.K. Agronomics, Inc., 510 S.W.2d 709 (1974) involved the obstruction a natural watercourse. "Any obstruction of the flow of water in a natural watercourse, including bridges, resulting in injury to another person furnishes such a person a right of action, however carefully the obstruction might have been made," wrote the court.

Kent v. City of Trenton, 48 S.W.2d. 571 (Mo. 1931) involved the discharge of city sewage effluent that polluted drinking and livestock water and caused odors at a private residence. The city constructed and used a permanent sewage pipe that discharged on private land, resulting in a continuing nuisance and damage to the property of the landowner. The city did not hold, nor did the landowner grant to the city, any license of permissive entry onto the private property. The permanent sewer was put into operation in 1914 and the case was filed in 1926. The court found that "any action for relief was barred by the Five-Year Statute of Limitations, §862, Rev. St. 1929." The court further held that "where the city discharged sewage on private land from permanent structure, a cause of action arose immediately, accrued to the owner of land, and was not transmitted to subsequent grantees."

Keyton v. MKT Rail Road, 224 S.W.2d 616 (1950) the court further defined surface water. The court held that "the term 'surface water' refers to that form or class of water derived from falling rain or melting snow or which rises to the surface in springs and is diffused over the surface of the ground while it remains in that state or condition and has not entered a natural water course, and the term refers to such overflow and floodwaters that become severed from or leave the main current of the natural water course and spread out over the lower ground."

King v. City of Rolla, 130 S.W.2d 697 (Mo. App. 1939) involved treated city sewage effluent that contaminated a livestock water supply. The court held that "the municipality had the right to utilize a stream for sewage purposes and could acquire the right by condemnation proceedings."

Kirkpatrick v. Yates Ice Co., 45 Mo. App. 335 (K.C. App. 1891) the court held that "each riparian owns to the centerline of the lake unless title to the lake bed has been separately identified as though it were dry land. The navigable or non-navigable character of a lake should be considered in settling the rights of riparian proprietors. Where lakes have been surveyed and sectioned by the general government, the abutting owners boundary would be confined to the literal terms of his deed."

Kueffer v. Brown, 879 S.W.2d 658 (Mo. App. 1994) the court confirmed the extension of the comparative reasonable use rule to include flooding from embankments and excessive discharge of surface water into drainways. An upper landowner brought suit for trespass against a lower property owner, and the lower owner counterclaimed for flood damage allegedly caused by a diversion of excess surface water by the upper property owner. In this case, the court found that "the law of nuisance acknowledges and accommodates two conflicting rights: the right of property owners to control and use their land for personal benefit and interest; and the right of the public and adjoining landowners to prevent unreasonable use which substantially impairs their peaceful enjoyment of their land. Nuisance liability can be imposed on actions stemming from unreasonable use of a watercourse as well as unreasonable use of surface water. Under modified common enemy, the upper owner's collection and diversion of surface water into a natural swale onto the lower's property, in excess of the swale's natural capacity, is an unreasonable use under both nuisance and negligence theories."

Leslie v. Mathewson, 257 S.W.2d 394 (Spr. Mo. App. 1953) this case concerned private versus public rights attached to water pollution. A property owner is not entitled to maintain an action for public nuisance merely because his injury is greater in degree than that suffered by general public, it is essential that his damage be different in kind from that suffered by the general public.

Lewis Blue Point Oyster Cultivation Co. v. Briggs, 229 U.S. 82 (1913) involved right of

access to a watercourse. "The deepening, in the interest of navigation, of a channel across a navigable bay, the bed of which is used for oyster cultivation under grants from a state, is not a taking of property of the lessee of the oyster beds within the meaning of the Fifth Amendment," wrote the Supreme Court. "The public right of navigation is the dominant right in navigable waters and this includes the right to use the bed of the water for every purpose which is an aid to navigation. Whatever power the several States had before the Union was formed over navigable waters within their respective jurisdictions has been delegated to Congress, which now has all governmental power over the subject, restricted only by the limitations in the other clauses of the Constitution."

Lewis v. City of Potosi, 348 S.W.2d 577 (St.L. Mo. App. 1961), 317 S.W.2d 623 (Mo. App. 1958) involved city sewage effluent that polluted domestic and livestock water supplies. The pollution of a watercourse by a municipality is treated as a nuisance, with the injured riparian landowner entitled to compensation for damages.

Looney v. Hindman, 649 S.W.2d 207 (Mo. 1983) the court found that drainage water is subject to common enemy rule but with consideration for "due care" and "collection and discharge." The "modified common enemy" concept of surface water gives the lower, or servient owners considerable freedom in blocking the flow of the surface water onto their land from upper lands, but in certain situations, places substantial restrictions of the rights of the upper owners who seek to cast surface waters onto lower lying properties. The collection and discharge of surface waters onto a lower or servient estate, to its damage, is actionable when such collection and discharge exceeds the capacity of the drainways.

Luckey v. City of Brookfield, 151 S.W. 201 (Mo. App. 1912) involved city sewage effluent discharge pollution of livestock water supply. The injury, from the pollution of a stream flowing through the land of an individual, by a city's construction of a sewer system empty-

ing into the stream is permanent, and inflicts injury upon the landowner upon the completion of the sewer system.

Luesse v. Weber, 350 S.W.2d 424 (St.L. Mo. App. 1961) involved ownership of and rights to use surface water (lake) where property boundary divides the lake. "The mere fact that on occasions, during high water due to overflow of rivers, boats were operated to and from river channel to owners of property abutting and lying under lake whose level was raised by dam, without remonstrance from owners of other land under the lake, created no vested rights or privileges antagonistic to whatever rights the other owners might have enjoyed. Operation of motor boats over the lake on occasions during flooding of rivers, when roads in area were under water, did not establish lake as navigable body of water."

MacNamara v. Kissimmee River Valley Sportsmen's Association, 648 So.2d. 155 (Fla. 1994) the Sierra Club Legal Defense Fund (SCLDF) brought suit on behalf of a local sportsmen's group when a group of landowners fenced off part of a swamp and island in the Kissimmee River declaring it their property. The claim was based on deeds, surveys, long-term payment of taxes, and permits from various governmental agencies that assume private ownership of littoral marshes. The Florida appeals court held that "the marshes, swamps and wetlands bordering the state's navigable lakes and streams are public waters and not the property of private landowners." The court relied upon SCLDF's theory that the legal boundary of navigable lakes and streams is not their ordinary or average water level, but rather the full reach of the water during the rainy season.

McCleery v. City of Marshall, 65 S.W.2d. 1042 (Mo. App. 1933) involved pollution of a stream caused by city sewage effluent. The city, in construction and use of a sewer system, created a permanent nuisance by allowing effluent to flow into, and thereby pollute, a stream, crossing the property of a lower landowner.

McCormick v. Kansas City, St.J. & C.B. R.R., 57 Mo. 433 (1874) involved drainage

water subject to common enemy doctrine, drainage of surface waters, damages to adjoining land, and reasonable care. The court held that drainage of surface waters by railroads must be accomplished with reasonable care. While the railroad company has the right to drain surface water from its roadbed, to protect its interests, it must be done in a manner to cause no unnecessary inconvenience or damage to adjoining property owners.

MCG Associates et al v. Department of Environmental Protection, 278 N.J. Super. 108 (1994) a builders' association and six individual developers successfully challenged state wetlands regulations that voided all transition areas exemptions as part of the New Jersey Department of Environmental Protection's assumption of jurisdiction over the federal freshwater wetlands program. The appellate court held that "the regulations were inconsistent with the state's Freshwater Wetland Protection Act, intended to exempt projects which have been approved by local planning or zoning boards prior to the effective date of the act, unless federal regulations conditioned the state's assumption of the federal program upon voiding those exemptions. In approval of the state program, the EPA had made it clear that the state had to void exemptions for construction in wetlands in order for the state to assume administration of the federal program. The EPA also indicated that it has no interest in the state's wetland transition area requirements since the federal program does not regulate buffer zones."

McKinney v. Northcutt, 89 S.W. 351 (St.L. App. 1905) the court determined that a natural stream capable of floating rafts of logs is navigable in the sense it is a public highway in which the riparian owner does not have the right to obstruct and whose riparian rights are subject to public easement.

Mehonray v. Foster, 132 Mo. App. 229, 111 S.W. 882 (1908) the court held that under the common enemy rule a landowner may build on or alter the surface of his land to prevent surface water from coming upon his land from higher land and regardless that the embankments constructed by the lower land-

owner causes water to form ponds or collect on the lands of the upper owner.

Meyers v. City of St. Louis, 8 Mo. App. 266 (St.L. App. 1880) involved right of access to a watercourse at frontage of riparian property owner. The court determined that a riparian owner on a navigable stream owns to the water's edge, has the right of access to the river over his land, to make a landing subject to the rights of navigation, and to use the water in its natural flow. These rights can not be taken from the riparian owner for the public use without just compensation. A municipal corporation that constructs a dike into a navigable stream, which causes the water to be diverted from the front of the riparian owner's land, is liable for damages.

M.H. Siegfried Real Estate v. City of Independence, 649 S.W.2d 893 (Mo. 1983) involved drainage water subject to common enemy doctrine. A liability for impeding the flow of surface water cannot be imposed upon lower owner when no water is brought upon the upper owner's land that would not have otherwise flowed there.

Millard Farms, Inc. v. Sprock, 829 S.W.2d 1 (Mo. App. 1991) involved accumulation and discharge of drainage waters onto adjacent property, and confirmed and applied the modified common enemy doctrine. Under modified common enemy doctrine, a landowner may obstruct the drainage of surface water that does not flow through natural watercourse, without liability for damages, so long as the landowner does so reasonably, without recklessness or negligence, regardless if obstruction causes water to collect on adjoining property. Surface water draining through slough or depression, which do not receive water from any other sources other than rain, sleet, snow or other surface water, is not a natural watercourse, therefore, the lower land owner could treat the surface water as "common enemy" and obstruct its flow with a dam. Under the common enemy doctrine, the lower landowner does not need to establish good motive or good cause for blocking flow of surface water.

Missouri v. Illinois, 180 U.S. 208 (1900) confirmed that the U.S. Supreme Court is court of original jurisdiction in cases between the states where the legal issues address federal common law and water pollution. The case involved the pollution of Mississippi River at St. Louis by discharges into the Illinois River from the City of Chicago, which affected the health and property of the citizens of Missouri, whom the State of Missouri rightfully represents.

Missouri v. Wright, 201 Mo. App. 92, 208 S.W. 149 (1919) involved the recreational usage of surface streams, fish and fishing, navigable waters, riparian rights, and rafting logs on the Current River. The defendant was convicted for violating §4620 R.S. 1909 for cutting loose a raft of lumber, the property of Limes Tie and Lumber Co., on the Current River at the city of Doniphan. The raft of logs had been tied to a tree on an island owned by the T.L. Wright Lumber Co., the defendant and president of said company. The Wright Lumber Co. had posted property identification and no trespassing signs in plain view on its island. "A natural stream," wrote the court, "capable of floating rafts of logs and timber, is navigable, in the sense that even a riparian owner has no right to obstruct it, and the rights of riparian owners of adjacent soil are subject to the easement of the public in floating rafts without injury to the soil. One who violates §4620 R.S. 1909, by cutting adrift a raft of lumber moored by rope to an island in which defendant held title, situated in a navigable stream that is used as a public highway for floating timber, is not entitled to acquittal."

Munkres v. Kansas City, St. J. & C.B. Ry., 72 Mo. 514 (1880) the court distinguished watercourses from other forms of surface water. The court confirmed rights and liabilities of railroad and riparian and adjacent owners with regards to surface water in that "the railroad may construct ditches and dikes, practicing reasonable care and skill in doing so, and not be bound to protecting the adjacents' property, however, water of a stream or natural water course may not be diverted from its natural channel."

Namekagon Hydro Co. v. F.P.C., 216 F.2d 509 (7th Cir. 1954) involved the economic value of recreational opportunities when siting a hydropower facility. When reviewing application for license to construct a facility, the Federal Power Commission considers, among other things, the unique quality and recreational value of the river. Efforts to attach only monetary values to such recreational interests of unique and most special types must fail if the purpose is to show all that will be affected if such recreational resources are impaired or destroyed. The recreational resources of a unique and most special type fall within a wide range as to their local, regional or national importance. The consideration of public interest is no less because a unique and special type recreational resource may have local or regional interest.

Nantahala Power & Light Co. v. F.P.C., 384 F.2d 200 (4th Cir. 1967) the court held that federal licensing authority on nonnavigable streams where navigation is not affected but where power is transferred to another state falls under commerce clause rather than navigational servitude.

Nebraska v. Wyoming, 325 U.S. 589 (1945) involved interstate water appropriation. When determining whether one State is using or threatening to use more than its equitable share of benefits of a stream, all the factors which create equities in favor of one State or the other must be weighed in the determination of the controversy. Strict adherence to the priority rule of water appropriations may not always be possible and may call for the exercise of informed judgement on a consideration of many factors, priority of appropriation being the guiding principle.

New Jersey v. New York, 283 U.S. 336 (1931) involved interstate water rights and limitations on state laws. The state of New Jersey sued the state of New York and city of New York to enjoin them from diverting water from non-navigable tributaries of the Delaware River for increasing the water supply for the city. The State of Pennsylvania intervened in the case to protect its interests in the river. "This case can not be governed by a strict ap-

plication of common law rules of private riparian rights but rather by the principle of equitable apportionment applicable between states," wrote the court. "The fact that the diversion is from one watershed to another is not a hindrance. Provided that the navigability requirement is met the diversion is reasonably necessary to New York and does not materially affect the Delaware River and its uses in sanitation, industry, agriculture, a source of municipal water supply or its fisheries. The diversion, however, must remain subject to the paramount authority of Congress, with respect to navigation and navigable waters of the United States. The diversion is reasonably necessary to New York and not arbitrary or beyond the freedom of choice that must be left to that State. The possibility that the present diversion may limit future development in New Jersey is not a present interest and does not entitle New Jersey to relief. The diversion does not constitute a prior appropriation or give the state of New York or the city of New York any superiority of right over the state of New Jersey or the commonwealth of Pennsylvania in the enjoyment and use of the river and its tributaries."

Newman v. City of El Dorado Springs, 292 S.W.2d 314 (Spr. Mo. App. 1956) involved municipal sewage treatment plant pollution of a watercourse used for livestock water. A municipality has right to condemn and to appropriate under eminent domain the use of a watercourse for purpose of disposal of its raw sewage and the treated liquids and solids which may be a product of operation of a sewage plant, and is liable for nuisance if such action injures lower riparian owner.

Nickey v. St. Louis, M. & S. E. Ry. Co., 135 Mo. App. 661, 116 S.W. 477 (St.L. App. 1909) the court found that a railroad which, in construction of railway bridge, obstructed the flow of a natural watercourse causing it to back up and to overflow the lands of the upper riparian owner, is liable for damages suffered by the upper landowner.

Ozark Pipe Line Corp. v. Decker, 32 F.2d 66 (8th Cir. 1929) involved oil pipeline leaks contamination of percolating groundwater

which in turn polluted a well used for domestic and livestock water supply. The court held that "the evidence must show neglect on the part of the defendant in pollution of groundwater by a leaking oil pipeline, causing pollution of groundwater which in turn affects the quality of well water or spring water used for domestic supply or livestock watering."

Peck v. Herrington, 109 Ill. 611 (1884) dealt with the drainage of diffused surface waters from one landowner to another. The Illinois court held that "the same rule applied to a watercourse is applied to surface water flowing in a regular channel. The upper land owner has the right to have the surface water, coming onto his property naturally, to pass off the same to lower lands by natural or artificial channels, even if the water flowing to the lower land is increased. The lower owner must suffer this discharge. The upper landowner can not construct new drains so as to create new channel on the lower estate. Lower riparian landowners subject to natural servitude of drainage of surface waters from upper riparian landowners."

Pernell v. City of Henderson, 220 N.C. 79, 16 S.E. 2d 449 (1941) the court determined that cities do not have the right to appropriate surface water for use by non-riparian owners if such appropriation of water would infringe on the rights of riparian owners unless those owners are compensated.

Peters v. Shull, 379 S.W.2d 837 (K.C. Ct. App. 1964) involved construction of an artificial impoundment and the discharge of water onto an adjoining landowner's property, drainage of diffused surface waters, and constructed changes to the surface gradient resulting in damages to another's property. "The owner of a dominate estate cannot permit surface water to artificially collect on his premises and then discharge it in destructive quantities at one point in a body onto the servient estate. A landowner may, in the reasonable use and development of his land, drain it by building thereon sewers, gutters and other such artificial water channels for the purpose of carrying off surface waters into a natural surface

water channel located on his property without liability to his neighboring landowner, provided he does not exceed the natural capacity of the drainway to the damage of the neighboring property."

Peterson v. City of St. Joseph, 156 S.W.2d 691 (1941) addressed the topics of property boundaries and accretion in a navigable waterway. The plaintiff (Peterson) claimed 87.31 acres of land were formed from the Missouri River by accretion to an island or by abandonment of an adjacent old river channel, the island belonging to Buchanan County, from whom he received patent title. Defendant (City of St. Joseph) claimed the tract of land, lying next to the city airport, was formed by accretion to the airport lands and claimed title to land on those grounds. The court held that "accretions must, as a rule, in their formation, preserve uninterrupted contiguity with the shore of a stream in order that the owner of the land bordering on the stream may claim ownership of the new lands, and hence alluvion can not become an accretion to land by extending itself until it reaches the land, except where the title to the land extends to the center of the stream. Riparian owners along the Missouri River own to the water's edge only, since it is a navigable stream. As such, riparian owners may claim accretions only where gradual and imperceptible and contiguous with their land at the water's edge. Islands forming in the stream, continuing until they unite with the main bank is not an accretion."

Place v. Union Township, 66 S.W.2d 584 (Spr. Mo. App. 1933) the court differentiated diffused surface water from watercourses. In Missouri, the common-law rule that surface water is a common enemy which every landowner may resist, and that landowner is not liable for damages caused by its diversion incidental to improvement of his land, is conditionally provisioned that he does not do so in a negligent manner. Overflow or flood waters of streams constitute surface waters within the meaning of the rule governing the right of the landowner to resist and divert "surface waters" incidental to improvement of land. A

slough which connects with a running stream only during high water and through which overflow waters flow between well-defined banks and return to main stream, may be regarded as part of stream, and therefore not necessarily "surface water."

Pleasant Lake Hills Corp. v. Eppinger, 235 Mich. 174, 209 N.W. 152 (1926) a Michigan court held that "riparian rights are separate from and severable from riparian lands and may be conveyed separately from fee."

Prichard v. Hink, 574 S.W.2d 321 (1978) the court held that "watercourse must represent more than water from rain or melting snow, and sloughs are not considered watercourses."

Public Util. Dist. No. 1 v. City of Seattle, 382 F.2d 666 (9th Cir. 1967) involved federal licensing authority. The federal government's dominant navigational servitude is the power, in aid of navigation, to use streambed and shorelands of navigable waters up to the ordinary high water level. The federal government's navigational servitude does not destroy or exclude all property rights in beds and banks of navigable streams and such rights continue to exist but are held subject to the governmental power in the nature of the easement.

Ranney v. St. Louis & S.F. Ry. Co., 137 Mo. App. 537, 119 S.W. 484 (St.L. App. 1909) the court found that an upper riparian landowner does not have the prescriptive right to drain surface waters into a temporary artificial ditch dug and maintained by downstream riparian landowner.

Rector v. Tobin Construction Co., 351 S.W.2d 816 (St.L. Ct. App. 1961) involved obstruction or diversion of a watercourse which resulted in flooding. The flooding of another's land by blocking a stream constitutes a trespass. A trespass carries with it liability for damages regardless of fact that while committing the trespass the defendant was engaged in public work.

Reddick v. Pippin, 421 S.W.2d 225 (Mo. 1967) was brought due to a sewage lagoon which overflowed allegedly resulting in the

pollution of a domestic water supply well. The court held that "the point of origin must be shown, to attach liability to an upper landowner, for the pollution from sewage lagoon overflow causing pollution of lower owner's watercourses and wells."

Reutner v. Vouga, 367 S.W.2d 34 (St.L. Ct. App. 1963) involved the modified common enemy doctrine and its limits on one's actions to protect his land to those acts which are not recklessly injurious to another. This case involved a legal action by landowners against owners of a subdivision whose storm sewer runoff allegedly caused damage to plaintiffs' property. The court held that "the subdivision owner could not construct a sewer ditch on an easement, which was granted to a metropolitan sewer district by an adjoining owner, especially where the easement called for the construction of a subterranean sewer, and where permission had not been obtained from the metropolitan sewer district." In its modern concept 'sewer' connotes a subterranean conduit, not a ditch. Under the common enemy doctrine each landowner may use any means at his disposal to fend off unwanted surface waters, however, his actions must be exercised within reasonable limits and not in a reckless manner needlessly injuring servient tenements. The lower owner may not artificially collect and impound surface waters and cast it in concentrated and destructive quantities at one point onto a servient estate. Incident of ownership of land is the lawful right to use the property in any lawful manner and for any lawful purpose."

Riggs v. City of Springfield, 344 Mo. 420, 126 S.W.2d 1144 (En Banc 1939) involved odors at private residence caused by city sewage. This case addressed the distinction between temporary and permanent pollution of watercourse by municipal sewage. The right of the city to empty its sewage into a stream is merely a legislative license, revocable whenever public health and safety require.

Ripka v. Wansing, 589 S.W.2d 333 (1970) the court found that reasonable use of water by riparians must include consideration of other riparians and applies to the reasonable use of natural stream flow.

Roath v. Driscoll, 20 Conn. 533 (1850) in this case the court found that percolating water is owned entirely by the landowner and the effect of his use of such waters upon neighboring land is immaterial, the user of the water may only be held accountable for waste or malicious injury.

Roberts v. Hocker, 610 S.W.2d 321 (1980) the court held that a watercourse must consist of more than just a channel. Incidence of a channel for surface water, merely, does not establish a watercourse. The common enemy doctrine enables a landowner to repel surface water from the estate by discharge of flow upon land of a coterminous owner. The rule of due care is applicable to law of surface water in that it applies not only to the diversion and concentration of the flow onto an adjacent lot, but also to the collection and discharge of surface water onto the land of the other. The law of surface water deals with enjoyment and development of land and not the beneficial use of water, and so does not fall functionally within the rules of reasonable use of watercourses, subterranean streams and underground percolations.

St. Louis Southwestern Ry. v. Mackey, 95 Ark. 297, 129 S.W. 78 (1910) involved reasonable use of the natural flow of a stream. Any activity of another which causes the diminishment of the natural flow of a stream is an infringement upon the rights of the other riparian owners, who are entitled to a full natural flow.

Sanitary District of Chicago et al. v. the United States, 266 U.S. 405 (1925) the Supreme Court of the United States affirmed an injunction, by a lower court, against the Sanitary District. The case involved the denial of a permit by the U.S. Army, Corps of Engineers, for the Chicago Sanitary District to withdraw (divert) more than 4,167 cubic feet per second (cfs) of water from Lake Michigan (Great Lakes Watershed) through the Chicago Sanitary and Ship Canal into the Illinois River (Mississippi River Watershed). The court held that "the Canadian Boundary Waters Treaty of January 11, 1909, forbade any diversion greater than that amount." Justice Oliver Wendell

Holmes wrote: "This is not a controversy between equals. The United States is asserting its sovereign power to ... control the navigable waters within its jurisdiction ... [and] carry out treaty obligations to a foreign power. In matters where the national importance is imminent and direct, even where Congress has been silent, the States may not act at all."

Scenic Hudson Preservation Conf., v. F.P.C., 354 F.2d 608 (2d Cir. 1965) involved legal standing for relief of review of federal licensing application, protection of natural environmental qualities and historic value from hydropower development, active court involvement in developing alternatives. Economic injury is not a prerequisite for protection or relief where plaintiffs have shown a direct personal interest in a hydropower development proposal. Limiting, however, representation of individuals or groups who represent common interests does serve to expedite the administrative process of license application review. The right of the public must receive active and affirmative protection at the hands of the Federal Power Commission during the license application and public comment review process. The Commission must see to it that the record is complete and must include, as a basic concern during the process, the preservation of natural beauty, and of national historic shrines, keeping in mind that the cost of a project is only one of several factors to be considered.

Schalk v. Inter River Drainage Dist., 226 S.W. 277 (Mo. 1921) involved the common enemy doctrine as applied to surface water. Water overflowing the banks of a stream during a flood and spreading over bottomland is surface water. A natural stream can not be dammed up nor the water diverted from its "beaten path." The cutting by a drainage district of a barrow pit into a river so as to lower banks of river three feet and thereby cause water to submerge lower lands, which would not be submerged otherwise is an unlawful diversion of the waters of a river from their channel.

Schifferdecker v. Willis, 621 S.W.2d 65 (1981) the court found that ditches constructed

to drain surface water are not in and of themselves "watercourses."

Schoen v. Kansas City, 65 Mo. App. 134 (1895) involved city sewage effluent contamination of a stream. The right to damages from a public nuisance is not affected by the fact that the injured party's property may not abut on the place where the nuisance originated.

Schulze v. Monsanto Co., 782 S.W.2d 419 (Mo. App. 1989) the court held that the modified common enemy doctrine applied to the actions of an upper riparian landowner in improving and extending levees found on his property, which did not obstruct or divert natural water course, in that the levees did not take effect until flood stage, after river had overflowed its banks. The upper riparian landowner's control of river bank erosion and farmland flooding, by constructing levee and installing riprap and hard points along river, did not constitute an obstruction or diversion of natural water course so as to render upper landowner liable to lower riparian under trespass theory.

Schumacher v. Shawhan, 67 S.W. 717 (Mo. App. 1902) involved pollution of drinking and livestock water supply by food processing waste. The use of a stream for disposing of refuse of a distillery, in such a manner as not to pollute the water, provides no right by prescription to use it so as to pollute the water.

Senkevech v. Vaughn, 610 S.W.2d 399 (Mo. App. 1980) involved the common enemy doctrine, landowner rights, and the use of levee to repel floodwaters. A landowner may construct open ditches to drain or protect his land.

Shady Valley Park & Pool, Inc., v. Fred Weber, Inc., 913 S.W.2d 28 (1995) the court found that the adoption of the comparative reasonable use rule does not change the siltation rule. In this case, the court applied the same siltation rule cited in *Wells v. State Hwy. Comm'n.* after the adoption of the comparative reasonable use rule from modified common enemy without referencing *Wells*. The owner of a fish hauling and fee-for-fishing business, destroyed by mud flows and siltation

as a result of a highway construction project brought suit against the Missouri Department of Transportation contractor for breach of third party contract, negligence, trespass and punitive damages. The court held that "the acceptance doctrine did not apply in a negligence and trespass action by a third party landowner who suffered injuries as a direct result of the contractor."

Shelley v. Ozark Pipe Line Corp., 247 S.W. 472 (Mo. App. 1923), 37 S.W.2d 518, 327 Mo. 238 (1931) involved the contamination of private well by oil from pipeline leak. A "permanent nuisance" must usually be created by inherent character of structure or business, lawful and necessary operation of which causes permanent injury to another, while nuisance is created only through negligence and is temporary and abatable.

Sigler v. Inter-River Drainage Dist., 311 Mo. 175, 279 S.W. 50 (1925) involved floodwater, common enemy doctrine, and drainage of diffused surface waters. Allows for the construction of dams, dikes or other construction by landowners to protect their premises from overflow water and as a consequence other lands are flooded.

Skaggs v. City of Cape Girardeau, 472 S.W.2d 870 (St.L. Ct. App. 1971) the court found that reasonable use of land by landowner includes the construction of channels, ditches, and the like to drain surface water from his property.

Skinner v. Osage County, 822 S.W.2d 437 (1991) involved ownership of streambed on a nonnavigable river. This suit was filed over an ownership dispute of whether a rural roadway, traversing plaintiff's land was private or public. The roadway in dispute extended from a county road onto a gravel bar at the bank of the Gasconade River. The court held that "title to beds in navigable streams rests with the state. Riparian property owners own title to the shore of navigable streams down to the low water mark. On navigable streams, the property line between the riparian owner and the state is the low water mark, and on non-navigable rivers the riparian owners own title to the bed of the river to its central line or

thread. Title to islands in stream follows title to land where the island is found. Title to island formed by vertical accretion in navigable river is held by the state, and in non-navigable river is held by the riparian owner. Title to the part of the land which is cut off by water jumping over intermediate lands or running around them making new and additional channel is held by the riparian owner. Any accretions to island become property of owner of island. If accretions to island meet the mainland, the owner of the island owns all accretions to his shore to the point it physically meets another shore. A river is deemed to be 'federally navigable,' with title to it held by the state, when, in its ordinary condition, it is used or could be used as a highway for commerce; or it is capable of such use by the public. 'Navigable' streams, under the federal definition, do not include those which may only be floatable by small crafts like rowboats and canoes."

Slovensky v. O'Reilly, 233 S.W. 478 (Mo. 1921) involved federally defined navigation on rivers and streams. "The test of navigability of a river," as stated by the Supreme Court of the United States, "is that those rivers are navigable in law when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. Another test is whether, in its ordinary state, a stream or body of water has capacity and suitability for the usual purpose of navigation, ascending or descending, by vessels such as are employed in the ordinary purposes of commerce, whether foreign or inland, and whether steam or sail vessels."

Smith v. City of Sedalia, 152 Mo. 283, 53 S.W. 907 (1899) involved water pollution of domestic and livestock water supply by city sewage, judicial relief, and public interest versus private nuisance. The fact that sewers are necessary to a city, and that the statute directs that they shall follow as near as practicable natural drainage, does not authorize a city to empty its sewers on the land of an individual, to his damage. A city does not acquire pre-

scriptive rights to discharge its sewage, to a downstream owner's injury, into a stream flowing through the farm of the lower riparian, because private sewers, which were no part of the city's sewers, had polluted the water of the stream.

Smith v. City of Sedalia, 81 S.W. 165 (Mo. 1904) involved sewage discharge into watercourse by city injuring the downstream riparian owner by pollution of domestic and livestock water supply. A riparian owner claiming injury and harm resulting from pollution of water in stream flowing in water way across his property must show evidence that facts substantiate the claim.

Smith v. City of Sedalia, 244 Mo. 107 (1912) involved pollution of a watercourse caused by the sewage discharge of a city. The court found that pollution of watercourses is necessary to protect the public health. A lower riparian landowner can not recover damages from a city for discharging sewage into a creek upon his property and also institute an injunction to restrain the nuisance, the injury being of a permanent character. A recovery of damages for the appropriation of the creek by the city has the effect of confirming the right of the city to discharge sewage into the stream as effectually as if the right had been obtained through condemnation.

Smith v. Musgrove, 32 Mo. App. 241 (1888) the court determined that prescriptive rights can be gained by lower riparian in an artificial watercourse where it has been diverted by the upper riparian from its natural channel so that it no longer runs to the lower's property.

Smiths' v. McConathy, 11 Mo. 517 (1848) involved food processing and farm animal wastes that had polluted a stream used for domestic and livestock water supply. An upper riparian utilizing a creek, crossing property of lower riparian landowner, as disposal for refuse from distillery and offal from hog lot, thereby rendering stream unfit for consumption or use creates a nuisance, which is actionable in a court of law.

Sneed v. Weber, 307 S.W.2d 681 (St.L. Mo. App. 1958) involved navigable streams. The

court held that "the rule to be applied in this state in determining whether or not a body of water is navigable is to be found in the case of *Elder v. Delcour*, 364 Mo. 835, 269 S.W.2d 17. To be navigable under the Missouri rule, the stream must be capable of floating vessels or boats as are used in the customary modes of travel in pursuit of commerce. A stream is not navigable simply because a small boat may be navigated through a tortuous course. To be navigable, a stream must be navigable in its natural state, unaided by artificial means or devices; waters which may be made floatable only by artificial means are not regarded as navigable or as public highways."

Snively v. Jaber, 48 Wash. 2d 815, 296 P.2d 1015 (1956) involved a jurisdictional question as to whether riparian owner has right to use the entire surface of the riparian watercourse or only the part which overlies his portion of the streambed. The court found that the rights or privileges of riparian proprietors on a non-navigable lake with respect to boating, swimming, fishing and other similar activities, are owned in common, and any proprietor or his licensee may use entire surface of lake, so long as he does not unreasonable interfere with exercise of similar rights by other owners. The exercise of these rights does not have effect of making nonnavigable lake public, since a stranger has no right to enter on the lake without permission of abutting owner. Abutting owners own bed of nonnavigable lake.

Somerset Villa, Inc. v. City of Lee's Summit, 436 S.W.2d 658 (1968) the court found that a single polluter of a waterway can not be held responsible for entire pollution in the stream from all sources.

Springfield Waterworks Co. v. Jenkins, 62 Mo. App. 74 (1895) involved absolute riparian ownership of percolating groundwater. Percolating groundwater is regarded as a part of the soil to which an adjoining proprietor has no absolute or natural right. It belongs to the owner of the land, and its diversion and appropriation by him for the improvement or benefit of his estate can not be made the basis for complaint against him by anyone, however grievous the injury may be.

State ex rel. Applegate v. Taylor, 224 Mo. 393, 123 S.W. 892 (En Banc 1909) the court found that the determination of whether a stream is navigable is the province of judicial determination rather than the legislature, unless the stream is navigable in fact.

State ex rel. Ashcroft v. Union Electric Co., 559 S.W.2d 216 (1977) involved water pollution as a result of hydro-electric station depleting oxygen content of water. This case concerned the conduct of an electric company in causing or permitting water flow through its dam and electric generating plants water which was biologically devoid of or deficient in dissolved oxygen. It was found that "this action did not rise to level of legislative intent or conduct proscribed by the Clean Water Law (CWL). The CWL makes it unlawful for any person to cause pollution, from an external source, of any waters of the state or to cause or permit to be placed any water contaminant in location where it is reasonably certain to cause pollution of any waters of the state."

State ex rel. Citizens' Elec. Lighting & Power Co. v. Longfellow, 169 Mo. 109, 69 S.W. 374 (1902) one of only two cases where a Missouri court has held that "navigable waters are held by the state in trust for the public (Public Trust Doctrine)." The court held that "a riparian owner may not construct or encroach upon the watercourse so as to impede the public's right of navigation and travel." See *Benson v. Morrow*, 61 Mo. 345 (1875).

State ex rel. Dresser Indus., Inc. v. Rudy, 592 S.W.2d 789 (Mo. 1980) involved barite mine tailings discharged into a river. The court found that the enactment of Clean Water Law did not supercede or deny common-law nuisance actions for pollution of streams and waterways on behalf of State or private individuals.

State ex rel. Wear v. Springfield Gas & Elec. Co., 204 S.W. 943 (Spr. Mo. App. 1918) involved industrial waste pollution of a stream used for livestock water supply and had caused a fish kill in the watercourse. This case affirmed the right of public official to bring suit to enjoin polluter of public water supply where industrial waste polluted a stream used for livestock water and resulted in fish kill.

State of Washington Dep't of Game v. F.P.C., 207 F.2d 391 (9th Cir. 1953) the federal court confirmed that federal licensing authority supersedes state law.

Stewart v. City of Springfield, 350 Mo. 234, 165 S.W.2d 626 (1942) involved untreated municipal sewage release into a watercourse. The municipal discharge of sewage onto the property of an individual, or its discharge into a stream so as to pollute its waters and lessen or destroy the value of the stream itself, or, as a result, causes the decrease in the value of adjacent private property is considered compensable under provisions of eminent domain. A city is not privileged to create or maintain a public nuisance in the exercise of its use of an easement.

Stoeco Development, LTD. v. Dept. of Army Corps of Engineers, 710 F.Supp. 1075 (N.J. 1988) the Corps of Engineers sought to assert jurisdiction over about 17 acres of privately owned land allegedly containing federally regulated wetlands. In this case, the court held that "omission of lands from the USACE administrative record wetlands map did not render the administrative record of wetlands incomplete within the meaning of the Clean Water Act. The Corps' granting of permit to dredge wetland area did not preclude them from not allowing the dredged wetland material to be retained in or placed in the wetland."

Story v. Marsh, 732 F.2d 1375 (1984) involved the authority of Corps of Engineers to breach a levee on Mississippi River to reduce flood stage level downstream. The federal appellate court found that the decision of the Army Corps of Engineers to intentionally breach sections of a frontline levee of floodway, at points previously designated, was an action committed to agency discretion by law within the meaning of Administrative Procedure Act, and therefore the substance of the decision was not judicially reviewable.

Stough v. Steelville Electric Light & Power Co., 206 Mo. App. 85, 226 S.W. 295 (1920) the court found that a riparian land owner may not divert substantial quantities of water from a watercourse unless he returns it to the wa-

tercourse before it reaches the land of the lower riparian owner.

Taylor v. Rudy, 99 Ark. 128, 137 S.W. 574 (1911) involved reasonable use and natural flow of a stream. Any activity of another which causes the diminishment of the natural flow of a stream is an infringement upon the rights of the other riparian owners, who are entitled to a full natural flow.

Texas v. New Mexico, 462 U.S. 554 (1983) involved the fulfillment of obligations under an interstate water compact. Texas and New Mexico, upon congressional approval, entered into the Pecos River Compact to govern the allocation of waters of the Pecos River. The Pecos River flows from eastern New Mexico southward into western Texas. The compact required that New Mexico not deplete, by human activities, the flow of the river at the Texas - New Mexico state boundary below an amount equivalent to 1947 conditions. The compact also established a 3-member commission, two of which were voting members. The voting members were unable to reach an agreement to determine shortfalls in the river's flow and Texas filed action against New Mexico in the US Supreme Court alleging that New Mexico had breached its obligations under the terms of the interstate compact. The court appointed a Special Master to evaluate the facts of the case. The Supreme Court held that "once Congressional consent is given to an interstate compact as required by the Compact Clause, the compact is transformed into a law of the United States and unless the compact is unconstitutional, no court may order relief inconsistent with its expressed terms."

Texas v. Pankey, 441 F.2d 236 (10th Cir. 1971) dealt with federal common law water pollution. The state of Texas sought to enjoin residents in the state of New Mexico from using certain pesticides which would allegedly pollute an interstate river serving as domestic water supply for eleven Texas cities. The court held that "impairment of ecological rights of a state from sources outside the state's own territory is a matter having basis and standard in federal common law and, thus, constitute a

question arising under the laws of the United States for the purpose of determining whether federal district court has jurisdiction of action by the state against residents of another state."

Thomas v. Estate of Ducat, 769 S.W.2d 819 (1989) the court further defined and differentiated a water course from surface water. A "natural watercourse," which may not be obstructed without liability for ensuing damages to others, is a stream usually flowing in a particular direction, though it need not flow continually, in a definite channel having a bed, sides or banks and usually discharging itself into some other body of water. "It must be something more than mere surface drainage and does not include water flowing in the hollows and ravines in the land which is mere surface water from rain or snow melt and is discharged through them from a higher to a lower level which are at times destitute of water." The slough, on upper landowner's property, was found not to be a watercourse and therefore the landowner had the right, under the common enemy doctrine, to fill it without incurring liability for accumulation of surface water on neighboring farmland.

Thomas v. Concordia Canning Co., 68 Mo. App. 350 (K.C. App. 1897) involved riparian damage resulting from cannery operations. When noxious matter from a single identifiable source is conveyed by a sewer into a hollow or ravine onto a lower proprietor's property and produces a nuisance injury suffered by the lower landowner, it is immaterial whether the ravine contained a water course within the legal meaning of the term or whether the noxious matter was carried down the ravine by a violent rainstorm or by water flowing normally in the ravine.

T.L. Wright Lumber Co. v. Ripley County, 270 Mo. 121, 192 S.W. 996 (1917) the court held that an island which forms in the bed of a nonnavigable stream is the property of the

riparian who owns title to the bed where the island has formed.

Tyler v. Wilkinson, 4 Mason 397, 24 F. Cas. 472 (1827) was a landmark federal case which involved riparian rights in watercourses. "Prima facie every proprietor upon each bank of a river is entitled to the land, covered with water in front of his bank, to the middle thread of the river. In virtue of this ownership he has a right to use the water flowing over it in its natural current, without diminution or obstruction, but he has no property in the water itself. Every proprietor may use the water as it flows, according to his pleasure, if the use be not to the prejudice of any other proprietor. There is no difference whether a proprietor be above or below another (upstream or downstream) on the river, no right is acquired or lost by such relative location. No proprietor has a right to throw back water on a proprietor above, or to divert it from a proprietor below, to his injury. Priority of occupancy [i.e. the ownership of riparian land for a longer period of time as compared to another riparian owner] of the flowing water of a river creates no right, unless the appropriation be for a period, which the law deems a presumptive right. Of the nature and effect of presumptions¹ arising from the use of water, as to pre-eminence or prior use, in case of a deficiency to supply all concerned." [i.e. In both theory and practice, all riparians have equal footing, and therefore equal rights to use the water flowing in the watercourse.]

Udall v. F.P.C., 387 U.S. 428 (1967) involved federal licensing authority. Although the issue of federal development of water resources must be evaluated by the Federal Power Commission (FPC) in connection with its consideration of the issuance of any license for a hydroelectric project, the determinative test is whether the project will be in the public interest.

¹ An assumption of fact resulting from a rule of law which requires such fact to be assumed from another fact or set of facts. The term indicates that certain weight is accorded by law to a given evidentiary fact, which weight is heavy enough to require the production of further evidence to overcome the assumption thereby established.

Union Bridge Co. v. United States, 204 U.S. 364 (1907) involved right of access to watercourse. "Commerce comprehends navigation," wrote the court, "and to free navigation from unreasonable obstructions by compelling the removal of bridges which are such obstruction is a legitimate exercise by Congress of its power to regulate commerce. Requiring alterations to secure navigation against unreasonable obstructions is not taking private property for public use within the meaning of the Constitution. Although a bridge, erected over navigable water of the U.S. and under the authority of state charter, may have been lawful when erected and not an obstruction to commerce at the time, it was erected with the knowledge by the owners of the paramount authority of Congress over navigation and subject to the power of Congress to exercise its authority to protect navigation by forbidding maintenance when it became an obstruction."

United States v. Appalachian Elec. Power Co., 311 U.S. 377 (1940) involved navigation and federal licensing authority. In determining the navigability of a river, the federal government, through the powers of the commerce clause, may properly consider the feasibility of interstate use after reasonable improvements are made to the character of the river, such as a dam, and thereby render a previously unnavigable waterway navigable.

United States v. Chandler-Dunbar Water Power Co., 229 U.S. 53 (1913) involved navigation servitude power of the federal government. "The title of the owner of fast land upon the shore of a navigable river to the bed of the river, is at best a qualified one. It is a title which inheres in the ownership of the shore and passed with it as a shadow follows a substance, although capable of distinct ownership. It is subordinate to the public right of navigation, and however helpful in protecting the owner against the acts of third parties, is of no avail against the exercise of the great and absolute power of Congress over the improvement of navigable rivers. If, in the judgment of Congress, the use of the bottom of the river is proper for the purpose of placing

therein structures in aid of navigation, it is not thereby taking private property for a public use, for the owner's title was in its very nature subject to that use in the interest of public navigation. If its judgment be that structures placed in the river and upon such submerged land are an obstruction or hindrance to the proper use of the river for purposes of navigation, it may require their removal and forbid the use of the bed of the river by the owner in any way which in its judgment is injurious to the dominant right of navigation" wrote the court.

United States v. Chicago, M., St.P. & Pac. R.R., 312 U.S. 592 (1941) involved navigational servitude, right of access and discussed the high water mark of a watercourse. A railroad company whose road traverses an embankment built up from low water mark in the bed of a navigable stream to a level above that of ordinary high water mark is not entitled, under the Fifth Amendment, to claim compensation from the United States for additional cost of protecting the embankment necessitated by the action of the Government in raising the water level above natural high-water mark, by means of a dam, for the purpose of improving navigation. The power of the Government over navigation covers the entire bed of a navigable stream, including all lands below ordinary high-water mark. Whether title to bed is retained by State or is in riparian owner, the rights of the title-holder are subservient to this dominant easement.

United States v. Ciampitti, 615 F.Supp. 116 (N.J. 1984) the federal government brought suit seeking a permanent injunction restraining the defendants from engaging in placing fill material in a wetland site. "Where the property is characterized by saturated soil and aquatic vegetation, the property constitutes a wetland," wrote the court. The defendants were enjoined from placing further fill material in the wetland and were required to prepare a plan, under the supervision of the Corps of Engineers, to return the site to a wetland.

United States v. City of Fort Pierre, South Dakota, 580 F.Supp. 1036 (1983) the United

States brought suit against the city alleging violation of the Clean Water Act by its discharge of fill into a wetland area without a permit. The court determined that "the slough in question was frequently inundated and saturated, contained wetland characteristic vegetation, and had wetland characteristic soils, therefore was wetlands under the meaning of the Federal Water Pollution Control Act." The slough was adjacent to water of the U.S. and thus also qualified as wetlands within the meaning of the Clean Water Act, and its prohibition against placing fill material into wetland waters without a permit. The prosecution of the City for violating prohibition of the Clean Water Act against discharge of fill material into a wetland area was not precluded by the Corps of Engineers failure to comply with the Administrative Procedure Act in acting on the city's permit application where the Corps procedures were not governed by the Act and where the City itself brought the permit process to a stop by failing to wait for the process to be completed before discharging its fill material into the slough.

United States v. Commodore Park, 324 U.S. 386 (1945) involved a riparian owner's right of access to watercourse at frontage. "An owner of land in the bed of a navigable stream between high and low water mark, though his title is recognized by the State, is not entitled to compensation from the United States for a decrease in the value of the land resulting from operations by the United States for the improvement of navigation. A riparian owner whose fast lands were not invaded is not entitled to compensation from the U.S. for a decrease, resulting from operations by the United States for the improvement of navigation, is such value as his lands may have had by reason of their proximity to navigable waters. A project pursuant to which a navigable watercourse was dredged and the dredge material was deposited in a connecting navigable water, though originated for the improvement of shore facilities and through navigation of the connecting water was thereby blocked, was an integrated project which bore a substantial relation to commerce or navigation, and the

rule of governmental non-liability was applicable. The constitutional power of the federal government to regulate commerce may be exercised to block navigation at one place in order to aid it at another."

United States v. Combs, 37 U.S. (12 Pet.) 72 (1838) involved navigational servitude and federal power to restrain interference with navigation. "Pursuant to the Commerce Clause, Congress possesses the power to punish offences. The power to regulate commerce includes the power to regulate navigation as connected with the commerce with foreign nations and among the several states. It does not stop at the mere boundary line of a state, nor is it confined to acts done on the waters, or in the necessary course of navigation thereof. It extends to such acts done on land which interfere with, obstruct, or prevent the due exercise of the power to regulate commerce and navigation with foreign nations and among the states. Any offence which thus interferes, obstructs, or prevents such commerce and navigation, though done on land, may be punished by Congress, under its general authority, to make all laws necessary and proper to execute their delegated constitutional powers."

United States v. Cress, 243 U.S. 316 (1917) the court found that the servitude of private lands forming the banks and bed of a stream to the interests of navigation is a natural servitude, confined to such streams as in their natural condition. "When navigable streams are improved by the federal government which raises water above its natural level they remain navigable waters of the United States. The power of the federal government to improve navigable streams in the interest of commerce must be exercised, when private property is taken, in subordination to the Fifth Amendment. When such improvement subjects private lands to periodical overflows, injuring though not destroying their value, the United States is liable *ex contractu* to make compensation, and upon payment the United States acquires an easement to overflowed lands which remain the property of the private owner. The right to have water of a non-

navigable stream flow away from riparian land without artificial obstruction is not a mere easement or appurtenance, but exists by the law of nature as an inseparable part of the land itself."

United States v. Eldrege, 33 F. Supp. 337 (D. Mont. 1940) the court found that when gradual recession of water in a nonnavigable stream exposes new land it becomes the property of the riparian owner from whose land the water receded.

United States ex rel. T.V.A. v. Powelson, 319 U.S. 266 (1943) involved federal jurisdiction and dam site. In condemning lands for a federal project, the United States is not required to make compensation for the loss of a business opportunity, dependent upon the owner's privilege to use the state power of eminent domain in acquiring other lands, where such privilege has not been exercised and is revocable by the State, and where the State need not make such compensation were it the sponsor of the project and the taker of the lands in question.

United States v. Grand River Dam Authority, 363 U.S. 229 (1960) the U.S. Supreme Court further defined federal power as to navigable waterways and nonnavigable tributaries to protect navigation. When state agency had been authorized by state law and license from Federal Power Commission to build hydroelectric plants on nonnavigable tributary of navigable stream, and the Federal Government prevented consummation by building its own dam to protect navigable capacity of the navigable stream, the state agency is not entitled to compensation for "taking" of its water-power rights.

United States v. Kansas City Ins. Co., 339 U.S. 799 (1950) involved federal jurisdiction under navigational servitude and flowed lands. The United States is liable for destruction of agricultural value of uplands by underflow resulting from maintenance of river continuously as ordinary high-water mark, even though for improvement of navigation.

United States v. Larkins, 852 F.2d 189 (Ky 1985) the U.S. brought action seeking a permanent injunction against defendant for future violations of the Clean Water Act (CWA). The

court ruled that "presence of vegetation that requires saturated soils for growth, on land adjacent to a navigable body of water is sufficient to bring the land in question under the Clean Water Act definition of wetlands. Silviculture, exception to permit requirement of the C.W.A. applies to normal harvesting of trees, and not to activities of clearing timber to permanently change the area from wetland into non-wetland agricultural tract for row crop cultivation."

United States v. Rands, 389 U.S. 121 (1967) dealt with federal jurisdiction under navigational servitude and port sites. The interests of riparian owners are subject to the Federal Government's power to control navigable waters and the port-site value of land condemned for a federal lock and dam is not compensable under the Fifth Amendment.

United States v. Rio Grande Irrigation Co., 174 U.S. 690 (1899) the case further defines federal power in navigable waterways and nonnavigable tributaries to protect navigation. The unquestioned rule of common law was that every riparian owner was entitled to the continued natural flow of the stream; but every State has the power, within its dominion, to change this rule, and permit the appropriation of the flowing waters for such purposes as it deems wise. Congress recognized and assented to the appropriation of water in contravention of the common law rules; but it is not to be inferred that Congress thereby meant to confer on any state the right to appropriate all the waters of the tributary streams which unite into a navigable watercourse, and so destroy the navigability of that watercourse in derogation of the interests of all the people of the United States.

United States v. Riverside Bayview Homes, Inc., 729 F.2d 391 (1984) the federal government brought legal action against the owner of undeveloped suburban land alleging that the deposition of fill material on the land violated wetland regulations of the Corps of Engineers. The court held that "the undeveloped suburban land was not wetlands, even though it was frequently flooded and the flood waters caused aquatic vegetation to grow on the

land. The statutory authorization for the regulation of wetlands defined the subject matter intended to be protected only as navigable waters, and thus regulation, by the Corps, would be interpreted to apply to marshes, swamps, and bogs directly created by flooding of navigable waters and not to include inland low-lying areas. Low-lying land areas where water sometimes stands and where vegetation requiring moist conditions grows but located miles from a navigable waterway are not wetlands within the meaning of the Clean Water Act."

United States v. Ross, 74 FS 6 (1947) addressed the definition of navigable waters. The "federal test" of navigability was cited and applied by the court: "to meet the test of navigability as understood in American law a water course should be susceptible of use for purposes of commerce or possess a capacity for valuable floatage in the transportation to market of the products of the country through which it runs. Mere depth of water, without profitable utility, will not render a water course navigable in the legal sense, nor will the fact that it is sufficient for pleasure boating or to enable hunters or fishermen to float their skiffs or canoes. To be navigable, a water course must have a useful capacity as a public highway of transportation."

United States v. Telluride Co., 849 F.Supp. 1400 (1994) the U.S. brought suit seeking injunctive relief and civil penalties against the Telluride Company (Telco) for violating Section 404 of the Clean Water Act (CWA). The U.S. alleged that Telco illegally filled 44.5 acres of wetlands without a permit during expansion of a ski area and construction of a residential area, golf course, and parking lot. The U.S. filed a consent decree proposing a full settlement the same day that the suit was filed. The proposed decree would have prohibited Telco from any future discharges at the site that would violate the CWA, required Telco to restore 15.43 acres of wetlands at the ski area, construct 26.5 acres of new wetlands at a site approximately 60 miles from Telluride, monitor the constructed site for at least three years, pay civil penalties of \$143,000, and complete

and additional off-site preservation project estimated at \$42,000. The court denied the consent decree and ruled that it was not "fair, reasonable and adequate, or in the public interest." The court stated that the decree was not developed in a procedurally or substantively fair manner, was of questionable technical adequacy, and may not fully compensate the public for the alleged violations. The court questioned the Environmental Protection Agency's "reasoned decision making" in developing the decree, relying heavily on public comments rather than deferring to agency and administrative expertise.

United States v. Twin City Power Co., 350 U.S. 222 (1956) involved federal jurisdiction under navigational servitude and dam site. Just compensation for lands taken by the United States for navigation improvement does not include the value of waterpower in flow of stream.

United States v. 8,968.06 Acres of Land, 326 F. Supp. 546 (S.D. Tex. 1971) involved federal jurisdiction under navigational servitude and compensation paid for land taken along navigable rivers. Under established principles of valuation in eminent domain, highest and best reasonably probable use of condemned land may be shown insofar as prospective demand for such use affects market value while the property is privately held. Generally, it is forbidden to consider the effect of the proposed project on the value of land taken.

Utah v. United States, 403 U.S. 9 (1971) the equal footing rule was addressed in this case. The court found that ownership of streambeds originally located in U.S. territories passed to the state upon its admission to the union.

Village of Claycomo v. Kansas City, 635 S.W.2d 365 (Mo. App. 1980) involved leachate from landfill polluted groundwater and domestic water supply well. Landowner whose residence was adjacent to creek across from proposed landfill had standing to maintain action to enjoin alleged private nuisance of proposed solid waste disposal as against city, but failed

to state a claim against the Missouri Department of Natural Resources with respect to its issuance of permit to city to construct landfill and alleged no facts showing a violation of any statutory provision which, if provided, could be a basis for ordering the permit to be revoked.

Volkerding v. Brooks, 359 S.W.2d 736 (Mo. 1962) involved prescriptive water use rights, protection from unwanted water, riparian ownership, and islands. By acts of the General Assembly lands belonging to the State and formed by recession and abandonment of old beds of lakes and rivers were granted and transferred to counties in which the lands were located. Riparian owner owns to low water mark on navigable streams. Where there were accretions to land on both sides of navigable stream until both shores met, title by accretions would not extend beyond point of meeting.

Walther v. City of Cape Girardeau, 166 Mo. App. 467, 149 S.W. 36 (1912) the court found that under common enemy rule a landowner may build on or alter the surface of his land to prevent surface water from coming upon his land from higher land regardless that the embankments cause water to form ponds or collect on the lands of the upper owner.

Webb v. Carter, 98 S.W. 776 (St.L. Mo. App. 1906) involved the obstruction of a natural watercourse which resulted in injury to another party. One may recover damages resulting from the obstruction of a natural watercourse, no matter how carefully the obstruction may have been made.

Weir v. Wilmes, 688 S.W.2d 53 (Mo. App. 1985) involved drainage water in drainways. In a surface water case involving a natural waterway, the upper landowner is not liable, if his construction of drainage tile did not change direction of flow of natural drainage emptying onto the lower's land, the drainage from tiling did not exceed capacity of natural drainage of land, the upper owner is making reasonable use of his land, and the tiling did not collect or permit to be collected the normal flow of surface waters and thereby direct

or discharge the water onto the lower's property in concentrated and destructive quantities injurious to the lower landowner.

Weller v. Missouri Lumber & Mining Co., 176 Mo. App. 243, 161 S.W. 853 (Spr. App. 1913) the court found that any man-made obstruction which prevents travel on an otherwise navigable stream is a public nuisance and may be abated by judicial action. The court also held that the question whether a stream is navigable is one of fact for a jury to determine.

Wells v. State Highway Comm'n, 503 S.W.2d 689 (Mo. 1973) involved soil eroded from a highway construction site, with the resultant mud being deposited in a privately owned lake, to the damage of the lake owners. The Highway Commission claimed that the drainage water was subject to the common enemy doctrine. The court held that "the discharge of mud with drainage water constitutes a trespass, even though the discharge of water alone is not actionable under the modified common enemy rule. The mud which ruined the lake constituted a taking, entitling the land owners to a recovery, and that the Commission could not apply the common enemy doctrine in this situation" {overturned *Casanover* 1948}.

Welton v. Martin, 7 Mo. 309 (1841) addressed the riparian rights of a landowner. The court determined that a landowner is entitled to use a watercourse that flows across his land.

White v. Wabash Ry. Co., 240 Mo. App. 344, 207 S.W.2d 505 (K.C. App. 1947) the court found that statutory law requires railroads to build ditches and drains along the rail bed, therefore railroads are not liable for excess water cast onto the property of another.

Wilbour v. Gallagher, 77 Wash. 2d 306, 462 P.2d 232 (1969) involved the navigability of a stream. The court found that, for easement of public travel, navigability extends to the water's edge and expands and contracts as stream level rises and falls.

Wilson v. Black Bird Creek Marsh Co., 27 U.S. (2 Pet.) 105 (1829) involved interstate commerce and state police powers. The U.S. Supreme Court held that "In the absence of

conflicting legislation by Congress, there is a residuum of power held by the state to make laws governing matters of local concern which nevertheless in some instances may affect interstate commerce or even to some extent regulate it. States may regulate matters of local concern, if local in character and effect, and its impact on interstate commerce does not seriously interfere with its operation and the consequent incentive to deal with them nationally is slight. Such state statutes have been generally held to be within the purview of state statutory authority."

Windle v. City of Springfield, 275 S.W. 585 (Mo. App. 1925) involved the discharge of city sewage into a cave resulting in contamination of a nearby spring and a lake on a privately owned farm. The Court of Appeals allowed the decision of the lower court to stand, on the basis that the city was not liable for damages, because the sewer discharge was not authorized by a duly adopted city ordinance, even though the discharge was made by the city and at the direction of the city council. The court noted that this decision was in conflict with the holding in a similar case (see *Foncannon v. City of Kirksville*, 88 Mo. App. 279).

Wisconsin v. Illinois, 278 U.S. 367 (1929) involved interstate water diversion. (The previous case on this issue, which led to this action, was *Sanitary District v. United States*, 266 U.S. 405) The State of Wisconsin sued the State of Illinois and the Sanitary District of Chicago to enjoin the sanitary district from diverting additional water from Lake Michigan through a sanitary canal into another watershed as allowed by a permit from the Army Corps of Engineers. The States of Michigan and New York joined Wisconsin. The States of Missouri, Kentucky, Tennessee, and Louisiana, later joined by Mississippi and Arkansas, intervened to dismiss the case, which the court denied. The court appointed a Special Master to take evidence and make a report. The pleading by the State of New York attached riparian rights to the waters of the Great Lakes-St. Lawrence Waterway under the common law, and the Canadian Boundary Waters

Treaty of 1909. New York argued that the "Great Lake States" own the land under the Great Lakes-St. Lawrence Waterway and cited precedent to support its position. The defendants argued that there was no servitude to a lower state to permit the water to flow down unimpaired in quantity and that running water is not subject to ownership, also citing precedent. In its verdict, the court did not rule on the superfluous pleadings of the joining states, but rather directed its comments to the cause of the original action. The court confirmed that the permit of 1925 was the authority for maintenance of the diversion, and noted that in increasing the diversion, the Sanitary District had defied the terms of the Corps permit. The court held that the Sanitary District authorities have much too long delayed the needed substitution of suitable sewage [treatment] plants (for the flushing action of the diversion). The case was referred to the Special Master to prepare suitable conclusions and a decree (281 U.S. 179).

Wisconsin v. Illinois, 281 U.S. 179 (1930) decision *per curiam*. Based upon the report of the Special Master, the Court determined the amounts by which the unlawful diversion of water from Lake Michigan should be diminished from time to time, and the times to be fixed for each step. Justice Holmes delivered the opinion of the Court, saying "It already has been decided that the defendants are doing a wrong to the complainants and that they must stop it." The decree entered was that the Sanitary District would reduce diversions to not more than 6,500 cubic feet per second (cfs) as of July 1, 1930; to not more than 5,000 cfs as of December 31, 1935, and to not more than 1,500 cfs as of December 31, 1938. The Court rejected the plaintiffs' demands that all diversion through the Drainage Canal cease..., and adopted as more reasonable the Master's report that...an outflow into the DesPlaines River should be permitted and that the interests of navigation in the Chicago River...will require the diversion of an annual average not exceeding 1,500 cfs.

Wisconsin v. Illinois, 281 U.S. 696 (1930) decision *per curiam*. The Court issued its

decree governing the amount of water that might be diverted from Lake Michigan through the Chicago Sanitary and Ship Canal into the Illinois River. The Court retained jurisdiction for the purpose of any future modification of this decree, "which it may deem to be proper." Costs were assigned to the defendants (Illinois).

Wisconsin v. Illinois, 288 U.S. 587 (1933) Missouri and several other states applied to the court for a modification of the decree of April 21, 1930 (281 U.S. 696). The application was denied by the Supreme Court, January 16, 1933.

Wisconsin v. Illinois, 289 U.S. 395 (1933) following a hearing on the Report of the Special Master, relative to several points raised, the Court enlarged the decree of April 21, 1930. The former Special Master, Charles Evans Hughes, had become the Chief Justice of the Supreme Court by this time, and he delivered the opinion of the Court. The hearing focused on the evident delay of the Sanitary District in obtaining Corps of Engineers approval of the plans for carrying out the terms of the earlier Court decree, and the delay in construction. The Master's report noted the "inexcusable failure of the defendants to make an application...for such approval" and the "inexcusable and planned postponement of the beginning of construction...and the failure to proceed to a definite decision as to a site and...the acquisition of the site...and the failure to...prepare plans and specifications...for the Works." The Master's Report also noted that "because of its financial situation, the...District is at present powerless to contract for the design and construction...of the sewage treatment works due to the unmarketability of its bonds...unless the State of Illinois meets its responsibility and provides the money." The Court held that "the State of Illinois is the primary and responsible defendant...with full liability for the acts of its instrumentality, the Sanitary District of Chicago." The Court also held that, "the Rivers and Harbors Act of July 3, 1930, did not conflict with the terms of the decree." Notably, when the Court's authority was questioned by

the defendants, the Court held that "the authority of the Court to enjoin...necessarily embraces the authority to require measures to be taken..." to comply with the Court decree. The Court then enlarged the decree, stating, "It appearing that the Sanitary District can not construct the necessary sewage disposal works in time, for want of financial resources, the decree is enlarged to prescribe in terms: That the State of Illinois is hereby required to take all necessary steps, including whatever authorizations or requirements..." in order to carry out this decree, and before October 2, 1933, the State was to report to the Court its action in compliance with this provision.

Wisconsin v. Illinois, 352 U.S. 945 (1956) decision *per curiam*. (The middle 1950s was a time of severe drought in the Midwestern United States.) The Court was petitioned, and responded, "In view of the emergency in navigation caused by low water in the Mississippi River," the court decree of April 21, 1930, was temporarily modified to permit an average diversion of 8,500 cubic feet per second (cfs) "as the Corps of Engineers, United States Army, shall determine will be useful in alleviating the emergency" until 31 January, 1957. After that date, the 1930 decree would be in force.

Wisconsin v. Illinois, 352 U.S. 983 (1957) decision *per curiam*. In view of the continuing emergency in navigation caused by low water in the Mississippi River, the court decree of April 21, 1930 [281 U.S. 696] was further temporarily modified to permit the diversion of not exceeding 8,500 cubic feet per second (cfs) of water from the Great Lakes-St. Lawrence system into the Illinois Waterway as the Corps of Engineers, U.S. Army, should determine would be useful in alleviating the emergency. After 28 February 1957, the decree of 1930 was to be in force.

Wisconsin v. Illinois, 388 U.S. 426 (1967) was a further outgrowth of the cases cited immediately above. Joining Wisconsin in this suit were Minnesota, Ohio, Michigan, Pennsylvania, and New York. The court decree enjoined Illinois and its municipalities from diverting any of the waters of Lake Michigan or its watershed into the Illinois Waterway in

excess of an average of 3,200 cubic feet per second (cfs), which is permitted for diversion into the Sanitary and Ship Canal to maintain it in a satisfactory sanitary condition. Measurements made by the State of Illinois agencies were to be under the general supervision and direction of the U.S. Army, Corps of Engineers.

Wood v. Craig, 133 Mo. App. 548, 113 S.W. 676 (1908) involved diversion of a natural watercourse that resulted in the flooding of another's land. The court held that "the dominant proprietor may divert the water from its usual channel, but if it is returned to the same channel before it reaches the land of the next proprietor below, no one can complain, the rule will not justify one in so diverting the stream, though the change is made altogether on his own land, as to cause it to discharge on or overflow onto the land of a lower proprietor."

Wyoming v. Colorado, 286 U.S. 494 (1932) involved interstate state water rights and state water diversions. Because it was a suit between two states, the U.S. Supreme Court was the trial court. (There had been two earlier suits, 259 U.S. 419, 496; 260 U.S. 1.) Both states are "prior appropriation" states, and the "doctrine of appropriation for beneficial use" applies to both. The court held that "priority of appropriation gives superiority of right," which furnished the only equitable and right basis on which to determine the controversy between the two states; at issue was an earlier decree which allowed each state certain amounts of water from the interstate Laramie River. The court held that "the sovereign states acted on behalf of their citizens who are bound

by the earlier decree on maximum appropriations from the river was violated by the State of Colorado to the damage of Wyoming water users. Citizens of the states of Colorado and Wyoming are bound by the court ruling, as Colorado and Wyoming represent their citizens' interests on this matter, and each state is responsible for acts done by its citizens, which, in this case, is the diversion of an excess amount of water from the Laramie River which would otherwise go to residents of Wyoming."

Young et al. v. Moore et al., 236 S.W.2d 740 (Spr. App. 1951) the court held that the defendants were within their rights under statutory and common law to drain their land of surface water for agricultural purposes. The "common enemy doctrine" also was cited and reinforced. The court noted that the ditch had been "maintained openly and notoriously" for forty years in the community, and was theirs by adverse possession. The court cited *City of Hardin et al. v. Norborne Land Drainage District of Carroll County et al.*, Mo. Supp. 232 S.W.2d 921 as precedent. "This has always been the rule in Missouri and we have always followed the common law doctrine that surface water is a common enemy, and that each land proprietor may ward it off though by so doing he turns it on his neighbor. However, the rights given under the 'common enemy' doctrine must be exercised within reasonable limits and not recklessly, so as not to needlessly injure the servient tenements" (lower land holdings).

APPENDIX 2

RECENT JUDICIAL ACTION

This Appendix consists of excerpts from various sources on the internet that are available to public access. Please refer to <http://www.osca.state.mo.us/> and related sites for the most recent judicial actions.

*Compiler's Note: The following cases are compiled from the above noted internet web site as of November 1998, and reflect the court's slip opinions. These water-related cases have been abbreviated to reflect ONLY the case citation and the summary as provided by the court which decided the case. In those cases where the court did not provide a summary, a note has been added, "**Summary not published with Slip Opinion.**" For a complete slip opinion, please refer to the internet web site noted above.*

Opinion: Supreme Court of Missouri

Case Style: W. Todd Akin, et al., Appellants, v. Missouri Gaming Commission, et al., Respondents.

Case Number: 79594

Handdown Date: 11/25/97

Appeal from: Circuit Court of Cole County, Hon. Thomas J. Brown III

Opinion Summary:

In August 1996, the Missouri Gaming Commission was considering applications to license floating facilities in St. Louis County. Three Missouri taxpayers sued to prevent the licensing of facilities in artificial spaces filled with water from the Missouri River, not contiguous to the river but within 1,000 feet of the main channel. The Missouri Riverboat Gaming Association, the City of Maryland Heights, and three gaming corporations (including applicants Harrah's Maryland Heights Corporation and Players MH, L.P.) intervened. The circuit court, upholding the validity of a statute, dismissed the petition.

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

United State Court of Appeals
For the eighth circuit

Nos. 96-3654/3919/4220

Comfort Lake Association, Inc.,

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Plaintiff - Appellant/

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Cross Appellee,

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v.

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Appeals from the United States

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District Court for the

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District of Minnesota.

Dresel Contracting, Inc.; Fain

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Companies,

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Defendants - Appellees/

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Cross appellants.

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Submitted: October 22, 1997 Filed: March 5, 1998

Before McMILLAN, LOKEN, and HANSEN, Circuit Judges.

Summary not published with Slip Opinion

Opinion: Missouri Court of Appeals Southern District

Case Style: **Gary D. Dunbar, Plaintiff/Appellant, v. Robert Burns, Defendant/Respondent, and Lynn Burns, Defendant, D/B/A/ Niangua River Oasis Campgrounds & Canoe Rental.**

Case Number: 22157

Handdown Date: 08/12/98

Appeal From: Circuit Court of Dallas County, Hon. Theodore B. Scott

Opinion Summary: None

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

Opinion: Missouri Court of Appeals Southern District

Case Style: **John Farley and Rebecca Farley, Respondents, v. Wappapello Foods, Inc., Appellant.**

Case Number: 21372

Handdown Date: 12/09/97

Appeal From: Circuit Court of Butler County, Hon. Wm. Robert Cope

Opinion Summary: None

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

Opinion: Supreme Court of Missouri

Case Style: **Farmland Industries, Inc., et al., Appellants/Cross-Respondents, vs. Republic Insurance Co., et al., Respondents/Cross-Appellants.**

Case Number: 79032

Handdown Date: 03/25/97

Appeal from: Appeal from the Circuit Court of Clay County, Honorable David W. Russell, Judge

Opinion Summary: Under Missouri law, environmental response costs incurred pursuant to the Comprehensive Environmental Response Compensation Liability Act (CERCLA) and similar state laws are "damages" within the meaning of the policies issued to Farmland.

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

United States Court of Appeals
for the eighth circuit

No. 97-2279

State of Missouri; Missouri
Department of Natural
Resources, the Missouri Clean
Water Commission,

Plaintiffs - Appellants

v.

City of Glasgow, a Missouri
Corporation,

Defendant - Appellee.

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Appeal from the United States

Submitted: January 12, 1998

Filed: August 10, 1998

Before RICHARD S. ARNOLD, (1) Chief Judge, and WOLLMAN and HANSEN, Circuit
Judges.

Summary not provided with Slip Opinion.

Opinion: Missouri Court of Appeals Southern District

Case Style: **Osage Water Company, Plaintiff-Appellant, v. Miller County Water Authority, Inc., Defendant-Respondent.**

Case Number: No. 21022

Handdown Date: 07/07/97

Appeal From: Circuit Court of Camden County, Hon. Mary A Dickerson

Opinion Summary: AFFIRMED.

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

Opinion Supreme Court of Missouri

Case Style: **Premium Standard Farms, Inc., Appellant-Respondent, v. Lincoln Township of Putnam County and Dana Mathes, Respondents-Appellants.**

Case Number: No. 79107

Handdown Date: 05/27/97

Appeal From: Circuit Court of Putnam County, Hon. James To. Holcomb, Judge

Opinion Summary: Sections 65.650 and 65.700, RSMo specifically prohibit townships from exercising zoning power to issue regulations or to require permits with respect to farm buildings or farm structures. Lincoln Township's imposition of setback and bonding regulations exceed the township's statutorily granted powers. Lincoln Township has no power to commence a public nuisance action against Premium Farms.

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

Opinion: Missouri Court of Appeals Western District

Case Style: Public Water Supply District No. 10 of Cass County, Missouri, Respondent, v. City of Peculiar, Missouri, Appellant.

Case Number: 54531

Handout Date: 06/16/98

Appeal From: Circuit Court of Cass County, Hon. Joseph P. Dandurand

Opinion Summary:

The City of Peculiar appeals from the trial court's grant of summary judgment against it and in favor of Public Water Supply District No. 10 of Cass County ("PWSD"). PWSD owns and operates a public water supply system in Cass County. Peculiar also maintains and operates a municipal water supply system. When PWSD was formed in the 1970's, its boundaries were adjacent to the City of Peculiar. Since that time, Peculiar has annexed portions of PWSD's original service area, so that now the water service areas of Peculiar and PWSD overlap.

PWSD filed a petition in Cass County Circuit Court seeking a permanent injunction which would prohibit Peculiar from providing or offering water service to customers within PWSD's service area until November 1, 2018. As a basis for its claim, PWSD relies on federal statutes which authorize the Secretary of the Department of Agriculture to make or insure loans to public water supply districts. 7 U.S.C. section 1926(a)(1)(1988). PWSD acquired such a loan through the issuance of a series of bonds which the government purchased in 1983. The bonds were to mature in 2018. Federal statute provides that during the term of a loan made under 7 U.S.C. section 1926(a)(1), the water district shall have the exclusive right to service customers within its service area. 7 U.S.C. section 1926(b).

Peculiar argues PWSD lost its section 1926(b) protection in 1987 when it reacquired its bonds from the government. PWSD repurchased the bonds pursuant to the Omnibus Budget Reconciliation Act ("OBRA"), which required the Secretary of Agriculture to sell off a certain portion of outstanding rural water district debt. Omnibus Budget Reconciliation Act of 1986, Pub. L. No. 99-509, Title I, section 1001(a), 100 Stat. 1874 (1986). Each of the bonds had "Cancelled" stamped across its face and bore the inscription, "Acknowledged as of the date hereof the full payment and discharge of the series bond as evidenced by the cancelled series bonds attached hereto." To finance the repurchase, PWSD issued Water System Revenue Refunding Bonds, Series 1987 to various private parties. Peculiar contends the term of PWSD's loan with the government ended in 1987, as did its exclusive right to serve customers within its service area. However, PWSD counters with the argument that other federal statutory provisions, namely the Agricultural Credit Act of 1987 ("ACA"), extend its service area protection even after PWSD repurchased its loan. PWSD contends the ACA provides service area protection to all notes "sold or intended to be sold" pursuant to OBRA. Agricultural Credit Act of 1987, Pub. L. No. 100-233, Title VIII, section 803, 101 Stat. 1714 (1988). Peculiar argues the extension of service area protection only applies to debt that is sold to a third party or is refinanced by the water district such that the debt on the bonds remains outstanding.

Peculiar also applies the trial court's denial of its motion for summary judgment, which would have given it the right to service and solicit customers within PWSD's service area. REVERSED AND REMANDED.

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

Opinion: Missouri Court of Appeals Western District

Case Style: **Public Water Supply District No. 16, Appellant v. City of Buckner, Respondent**

Case Number: 53493

Handout Date: 09/23/97

Appeal From: Circuit Court of Jackson County, Hon. J.D. Williamson

Opinion Summary:

Appeal from summary judgment as to whether the city of Buckner was required to comply with section 247.170 in extending water service to an area annexed from a public water supply district.

REVERSED AND REMANDED.

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

Opinion: Missouri Court of Appeals Southern District

Case Style: **Scott Tie Company, Inc., Petitioner/Appellant, v. Missouri Clean Water Commission, Respondent/Respondent.**

Case Number: 21534

Handout Date: 06/01/98

Appeal From: Circuit Court of Wayne County, Hon. William Camm Seay

Opinion Summary: None

This slip opinion is subject to revision and may not reflect the final opinion adopted by the Court.

United States Court of Appeals for the eighth circuit

No. 96-3962

United States of America,

Appellee,

v.

Thomas J. Sinskey,

Appellant.

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Appeals from the United States
District Court for the District
of South Dakota

No. 96-3965

United States of America,

Appellee,

v.

Wayne Kumm,

Appellant.

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Submitted: May 20, 1996

Filed: July 11, 1997

Before RICHARD S. ARNOLD, Chief Judge, and BOWMAN and MORRIS
SHEPPARD ARNOLD, Circuit Judges.

MORRIS SHEPPARD ARNOLD, Circuit Judge.

Summary: Not published with Slip Opinion

APPENDIX 3

HOW A BILL BECOMES A LAW

How a Bill Becomes a Law

No law is passed, except by the introduction of a bill. Bills may originate in either house of the General Assembly, and are designated as Senate bills or House bills, depending on the house where they originate. No bill (except a general appropriations bill) may contain more than one subject, which is to be expressed clearly in its title. No bill can be amended in its passage through either house so as to change its original purpose. No bill can be introduced in either house after the 60th legislative day of a session, unless consent is given by a majority of the elected members of each house. The Governor may request consideration of proposed legislation by a special message. No appropriation bill shall be taken up for consideration after 6:00 P.M. on the first Friday following the first Monday in May of each year.

Introduction of a Bill

Legislation approved by the 1971 General Assembly provides for pre-introduction of bills beginning December 1st preceding the opening of the session and continuing up to, but not including the first day of the session. Bills filed during the pre-introduction period are automatically introduced and are read the first time on the opening day of the session.

Bills also may be introduced by any Senator or Representative during the session. Bills may be written by the legislator or drafted by

the staff of the Committee on Legislative Research at the request of a Senator or Representative. When introduced, a bill is assigned a number, and read for the first time by its title by the Senate or House Reading Clerk. It then goes on the calendar for second reading and assignment to committee by the Speaker of the House or the President *pro tem.* of the Senate.

A public hearing before the committee to which a bill is assigned is the next step in the legislative process. Except in the case of some unusually controversial, complex, or lengthy bills, the bill is presented by its sponsor, and both proponents and opponents are heard in a single hearing. When hearings are concluded, the committee meets to vote and make its recommendations. The committee may: (1) Report the bill with the recommendation that it "do pass;" (2) Recommend passage with committee amendments, which are attached to the bill; (3) Return the bill without recommendation; (4) Substitute, *in lieu* of the original bill, a new bill to be known as a committee substitute; (5) Report the bill with a recommendation that it "do not pass," or (6) Make no report at all.

Perfection of a Bill

If a bill is reported favorably out of committee, or a substitute is recommended, it is placed on the "perfection calendar" and when its turn comes up for consideration, it is debated on the floor of the originating house. If a substitute is recommended by the commit-

tee, or if committee amendments are attached to the bill, they are first presented, debated, and voted upon. Further amendments can then be proposed by other members with their changes designated as House or Senate amendments, to differentiate them from the committee amendments. When all amendments have been considered, a motion is made to declare the bill perfected. Perfection is usually voted on a voice vote, but on the request of five members, a roll call shall be taken. If a majority of members vote to perfect, the bill is reprinted in its original or perfected form.

Passage of a Bill

After perfection and reprinting, the bill goes on the calendar for a third reading and final passage. When the bill is reached in the order of business, any member may speak for or against its passage, but no further amendments of a substantial nature can be offered. At the conclusion of debate, a recorded vote is taken. Approval of a Constitutional majority of the elected members (18 in the Senate, and 82 in the House) is required for final passage.

Passage of the bill is then reported to the other house, where it is again read a second time; referred to committee for hearing; reported by the committee; and read a third time and offered for final approval. If further amendments are approved, these are reported to the originating house with a request that the changes be approved. If the originating house does not approve, a conference may be requested and members from each house are designated as a conference committee. Upon agreement by the conference committee (usually a compromise of differences), each reports to its own house on the committee's recommendation. The originating house acts first on the conference committee version of the bill. If it is approved, it goes to the other house, and upon approval there, the bill is declared "truly agreed to and finally passed." If either house rejects the conference committee report, it may be returned to the same or a newly appointed committee for further conferences.

Upon final passage, a bill is ordered enrolled. It is typed in its finally approved form, printed, and the bills are closely compared and proofed for errors. Bills truly agreed to and finally passed in their typed form are then signed in open session by the Speaker of the House and the Senate President or President *pro tem*. At the time of the signing, any member may file written objections which are sent with the bill to the Governor.

The Governor's Role in Lawmaking

The Governor has 15 days to act on a bill, if it is sent to him during the legislative session; and 45 days, if the legislature has adjourned or has recessed for a 30-day period. If he signs a bill, it is returned to its house of origin with his message of approval, then delivered to the Secretary of State. If the Governor vetoes a bill, it is returned to the house of origin with his message of objections. A two-thirds vote by members of both houses is required to override a Governor's veto. If any bill shall not be returned by the Governor within the time limits prescribed by Article III, Section 31, of the Missouri Constitution, it shall become law in the same manner as if the Governor had signed it.

Effective Date of Laws

The 1945 Constitution of Missouri provides that no law passed by the General Assembly shall take effect until 90 days after the end of the session in which it was enacted, except an appropriation act, or in case of an emergency, which must be expressed in the preamble or in the body of the act. Some bills specify the exact date when they are to take effect.

Duties of the Secretary of State

The Secretary of State preserves the finally typed copy of the law. All the laws are bound together in one volume at the close of each session and seldom are seen unless some question arises. Prior to binding of the laws,

annually, the Secretary of State publishes a volume of *Laws of Missouri*, which is distributed to members of the General Assembly, state officials, and other interested people.¹

The general statute laws are revised by the Revisor of Statutes in the Office of the Committee on Legislative Research, and published. These are known as the *Revised Statutes of Missouri*. Under legislation, the Committee on Legislative Research also publishes

annual supplements to the statutes, including changes in laws since the last revision.

N.B.— The term, *pro tempore*, Latin for “for a time,” usually is shortened to “*pro tem.*” when used to designate the elected leader of the State Senate. The Lieutenant Governor of Missouri serves as the Constitutional President of the Senate, and in his absence, the President *pro tem.* acts in his place.

¹Adapted from “How bills become laws”, in the *Official Manual, State of Missouri*, Secretary of State, Jefferson City, Mo., 1995.

APPENDIX 4

NUMERICAL LISTING OF WATER-RELATED MISSOURI STATUTES

NOTE: Please refer to current edition of Revised Mo Statutes for most recent statutory law(s).

Section 7.002 (Missouri-Nebraska Boundary Compact). This statute sets up a formal means of negotiation with the State of Nebraska on the subject of the state boundary line between Missouri and Nebraska, due to changes in the channel of the Missouri River, as a result of both natural events and man-made works. This first was enacted into law, 1990, last amended, 1997.

Section 10.130 was enacted in 1997 to designate the paddlefish (or spoonbill) as the official aquatic animal of the state of Missouri.

Section 10.135 also was enacted in 1997 to designate the channel catfish as the official fish of the state of Missouri.

Section 21.475 (Joint Committee on Wetlands, General Assembly). The Joint Committee on Wetlands was set up to be a wetlands oversight committee by this statute. (Several state agencies do work in wetlands.) It is composed of five senators, and five representatives. This was enacted into law, 1992, and the sunset provision was removed in 1995.

Section 26.130 (Flood Control). This law authorizes the Governor to designate a state agency to represent the state in negotiations with federal government agencies, regarding public works on rivers and harbors for flood control and other purposes. This was enacted into law, 1945.

Sections 30.750 through 30.767 (State Treasurer) is part of the law dealing with linked deposits, making available water system development loans. In Section 30.750 (13),

eligible water supply systems are defined (serving less than 50,000 people and must be certified by DNR as eligible). This was enacted into law, 1986.

Section 46.010 (Boundaries of Counties) defines the location when a watercourse determines a county's political boundary. Missouri state boundaries are determined in part by the Des Moines River, the St. Francis River, the Mississippi River, and the Missouri River. Many counties have riverine boundaries. This was enacted into law prior to the codification of statutes, 1909.

Sections 49.600 *et seq.* (Flood Insurance) authorize Missouri county commissions, in those counties not having planning and zoning, to adopt orders or ordinances, as required to participate in the National Flood Insurance Program. Municipalities have the necessary police powers to join the NFIP, but counties, lacking needed police powers unless they have adopted county planning and zoning, need this enabling legislation. This was first enacted into law in 1980, applied only to second, third and fourth class counties along the Mississippi River. These sections have been amended several times, until all counties now are empowered.

Chapter 64, RSMo, has as its topic, "County Planning— Zoning— Recreation— Natural Streams and Waterways." This is a large chapter in the title on County Government.

Section 64.001 states that levee and drainage districts are subject to flood plain management regulations adopted by any county

government pursuant to Chapter 49.600 or other legislation. This section reinforces Subsection 49.600.1. This section was enacted into law, 1991.

Section 64.040 (County Master Plans) is the part of this chapter on planning and zoning for first class *charter* counties. This section directs that the master plan of the county shall be developed so as to conserve the natural resources of the county, and may include, among other things, studies and recommendations relative to bridges, wildlife refuges, and dams affecting water. This was enacted into law, 1941.

Section 64.231 (County Master Plans) is the part of this chapter on planning and zoning for first class *non-charter* counties. This section is virtually identical to Section 64.040, *supra*. It was enacted into law, 1959, and amended, 1994.

Section 64.300 (Private Sewers) is a one-section statute that mandates that the landowner enclose (or cover) private sewers or ditches within a thousand yards of a children's recreation area, in certain counties. This was enacted into law, 1961.

Section 64.550 (County Master Plans) is the part of this chapter on planning and zoning for second and third class counties. This section is virtually identical to Sections 64.040 and 64.231, *supra*. It was enacted into law, 1951, and amended, 1971.

Section 64.815 (County Master Plans) is the part of this chapter on *alternative* county planning and zoning. This section also is virtually identical to Sections 64.040, 64.231, and 64.550, *supra*. It was enacted into law, 1965, and amended, 1971.

Section 64.975 (Natural Streams and Waterways) is another one-section part of this chapter. This section makes provision for majority approval by the voters of a county, at a referendum, of any measure that would designate waters of the state (in the county) as requiring special protection by a state agency. The lack of any further direction or provisions for carrying out this legislation is notable. This section was enacted into law, 1990.

Chapter 67, RSMo, has as its topic, "Political Subdivisions, Miscellaneous Powers." This is another large chapter on governmental powers, including taxing powers, that relate to water and sewer utilities, stormwater control, tourism, and other subjects.

Sections 67.700 through 67.727 (Capital Improvements Sales Tax, Certain Counties) is, basically, a tax law, prescribing the voting, the trust fund in which to deposit the tax money, the allowable rates of taxation, and other details. Some of these sections were enacted in 1983. Section 67.713, in particular, however, discusses county-municipal stormwater and public works sales tax trust funds, and their use. This was enacted into law, 1987, and amended in 1991.

Section 67.729 (Storm Water Control and Public Works Projects Sales Tax) addresses specifically a sales tax for stormwater control and public works projects, and the trust fund for this money and how it may be spent. This section was enacted in 1985, and amended since.

Sections 67.730 through 67.739 (Capital Improvements Sales Tax, Jackson County) also primarily is tax legislation, but because the law was written to help counties and their cities deal with stormwater runoff and other public works problems, they are mentioned in this volume on water law. These sections were enacted in 1987.

Section 67.783 through 67.790 (Recreational Lake Authority) is in a part of this chapter dealing with recreational systems of political subdivisions. These sections allow the creation of a joint county recreational lake authority under certain conditions. These sections were enacted into law, 1990.

Section 67.788 (12) 7 (Recreational Lake Authority may sell water) is a subpart of this group of sections granting a recreational lake authority permission to sell water and to construct infrastructure. This was enacted into law, 1990.

Sections 67.870 through 67.910 (Open Space Conservation) issue a policy statement on open areas, define what open space means,

and prescribe what agencies may acquire land and for what purposes, including water rights. These were enacted into law, 1971.

Chapter 68, RSMo (Port Authorities), allows cities and counties, on navigable waterways, to form local port authorities, which then become political subdivisions of the state.

Section 68.025 provides the powers of a port authority, including condemnation, construction or removal of wharves, and improvement of navigation.

Section 68.035 authorizes the state (through MoDOT) to grant funds to port authorities.

Section 68.065 gives the powers of the state transportation commission relative to port authorities. One of these powers is to develop a statewide plan for waterborne commerce. These sections were enacted into law, 1974.

Chapter 70, RSMo (Powers of Political Subdivisions to Cooperate) is another chapter with many references to water.

Section 70.115 allows cities and counties to contract with federal government agencies for recreational facilities along rivers, enacted into law, 1965.

Section 70.327 (Kansas-Missouri Flood Prevention and Control Compact), is an expression of agreement with the State of Kansas that destructive flooding along the mutual boundary of the two states, namely the Missouri River, could be prevented and controlled by a Kansas-Missouri Flood Prevention and Control Commission made up of members from each of the states. There is no record that this compact was adopted by the Kansas State Legislature, nor that it was approved by Congress. This was enacted into law, 1985.

Sections 70.330 through 70.360 (Cooperation by Cities of 100,000 Inhabitants or More with Drainage Districts for Flood Protection) is enabling legislation for cities to contract with others, including other states, for sanitary or storm sewers or construction of levees for protection against flood. These

sections were found in the codified laws of 1919.

Sections 70.370 through 70.441 set up the Bi-State Metropolitan Development District of greater St. Louis, in the form of a compact between Missouri and Illinois, with powers defined and granted. Among other powers, the legislation provides for the district to facilitate cooperation in regard to bridges, water supply, sewage disposal, wharves, docks, harbors, and commodity storage for barge shipment. Enacted in 1949, this legislation has been amended several times to reach its present form. Also adopted by Illinois in 1949, the Compact was approved by Congress, 64 Stat. 568.

Chapter 71, RSMo (Provisions Relative to All Cities and Towns) conveys what are termed "police powers" to local governments for such matters as fire protection, public utilities and public health. A number of water-related statutes are found in this chapter.

Section 71.287 makes voluntary compliance with Section 256.400 et seq., the water use registration report, the basis for allowing local charges on any tax bill for public works improvements. This was enacted into law, 1983.

Section 71.525 places restrictions on local condemnation of public utilities (water or sewer) except in certain circumstances. This was enacted into law, 1994.

Section 71.530 provides that municipalities may contract with corporations for water supplies. This is an old law, on the books when the statutes were codified in 1909.

Section 71.540 allows municipalities to contract with other municipalities for water supplies. Another old law, this was on the books when the statutes were codified in 1919.

Section 71.550 provides for voter approval of water supply contracts; also codified in 1919.

Section 71.700, under provisions for public health, gives cities the power to regulate and license (and collect a license tax on) water supply sources. This law goes back to the statute codification of 1909.

Section 71.710 enables cities to protect water supply sources from contamination. This law also goes back to 1909.

Section 71.715 allows sewerage service charges to be established for users. This law was enacted in 1961.

Chapter 77, RSMo (Third Class Cities) conveys powers and duties to cities of the third class.

Sections 77.140 - 77.150 grants to cities the power to establish, alter and change watercourses; establish, make and regulate public wells, cisterns and reservoirs, and other powers, including the construction of dams, lake and flood protection systems, mineral water vending houses, and the laying of pipelines for the distribution of mineral waters. These were laws when the statutes were codified in 1939.

Section 77.490 allows cities to fix the price and quality of water and other utilities. This was enacted before the 1909 codification of statutes.

Section 77.530 gives cities the power to condemn land for waterworks and sewer outfalls inside or outside the city limits. This was law before the 1909 codification.

Chapter 79, RSMo (Fourth Class Cities) conveys powers and duties to cities of the fourth class.

Section 79.380 grants the same powers to fourth class cities that Section 77.530, *supra*, grants to third class cities (may condemn land for waterworks and sewers). This section also was law before the 1909 codification of statutes.

Section 79.555 gives municipal redevelopment authorities of fourth class cities powers to acquire or dispose of property and plan, build, and operate water plants, among other things. This was enacted into law, 1988.

Chapter 80, RSMo (Towns and Villages) conveys powers and duties to town and village governments, much as previous chapters were enacted for different classes of cities.

Section 80.090 lists the powers of boards of trustees (the governing bodies of towns and

villages) to erect, repair and regulate wharves; regulate the landing of steamboats; establish and provide for wells, cisterns, and pumps; erect and repair bridges; open drains and sewers (and other powers listed). This was enacted into law sometime before the 1909 codification.

Chapter 81, RSMo, conveys police powers to "special charter" cities and towns, that is, those in existence prior to the Missouri Constitution of 1875.

Section 81.190 (Acquisition of property) gives these cities the power to acquire, establish, and maintain such water-related functions or works as bathing places, watering troughs, public toilets, street sprinkling, ferries, waterworks, wharves, docks, waterways, canals, and "other public utilities, not herein enumerated". This section became law before the 1919 codification of statutes.

Chapter 88, RSMo, (Public Works and Condemnation) sets out powers and duties for third and fourth class cities, special charter cities, towns and villages, and certain other cities.

Section 88.497 is applicable to third class cities taking private land for public purposes, including waterways and wharves.

Section 88.633 is on powers of third class cities to supply water, by themselves or by contracting for it.

Section 88.773 is on powers of fourth class cities to supply water, by themselves or by contracting for it.

Section 88.797, is on street sprinkling powers in special charter cities and towns, and how taxes may be assessed to pay for it.

Section 88.801, is on the establishment of public sewer systems in special charter municipalities, and the special public sewer tax that may be levied for them.

Sections 88.832 through 88.852 relate to municipal general sewerage and district sewers, and taxes to support them. Most, but not all, of these sections of statute were on the books prior to the 1909 codification, with amendments to some of them, since.

Chapter 91, RSMo, (Municipally Owned Utilities) pays special attention to local waterworks.

Sections 91.010 – 91.600 apply to various classes of cities. Many of these laws were enacted before 1909. They are detailed administrative laws.

Section 94.413 (chapter on Taxation in Other Cities), contains language for the benefit of “cities of designated population”. The language is directed for a city with a population of more than 100,000, in a first class county which does not adjoin any other first class county (Springfield and Greene County meet the definition), a Stormwater Sales Tax is authorized by law. This was enacted into law, 1993.

Section 192.100 obligates the Department of Health (Bureau of Food and Drug Inspection) with the duty of inspection of beverages. This was enacted into law, 1945.

Sections 196.365 – 196.445 (chapter on Food and Drugs) concern the manufacture of soft drinks and beverages, including bottled water. Sanitary requirements are set forth in Section 196.420. These sections were enacted into law in 1943.

Chapter 204, RSMo, in toto, (Common Sewer Districts in Certain Areas) addresses sewer system law. Much of this law deals with issuance of bonds, levy of taxes, powers of boards of trustees, and other administrative or financial details. A great portion of this law was enacted in 1967, with numerous amendments since.

Title XIV of the Revised Statutes of Missouri governs “Roads and Waterways.” This is a twelve-chapter part dealing with state highways, road districts, bridges, dams, mills, barges, ferries, and wharves. These chapters are numbered from 226 through 238.

Section 227.080, in the chapter on the state highway system, notes that bridges over navigable streams shall be “part of the state highways.” This was enacted into law prior to the revision of statutes in 1929, and amended in 1949.

Sections 229.150 through 229.220, in “Provisions Relating to All Roads,” addresses crossing of waterways or ditches, and protection of bridges from damage. These sections of law were enacted prior to the codification of 1909.

Chapter 234, RSMo, in toto, (Bridges) covers bridges over water, generally, with some interstate bridges dealt with more specifically. Toll bridges, inter-county bridges, bonded indebtedness, and other matters are covered in this chapter. Many of these sections of the law date to before 1909.

Sections 236.010 *et seq.*, in the chapter on dams, mills, and electric power, set forth the riparian right to build a dam on a non-navigable stream, with specific procedures to follow. These sections were enacted into law prior to the codification of 1909.

Section 236.230 declares that dams without chutes made for the passage of fish in each direction are nuisances, and may be abated as such, and the owner guilty of a misdemeanor. This section also dates back to before 1909. (See also Section 252.150 – Conservation– Fish and Game.)

Sections 236.400 *et seq.*, constitute the Dam and Reservoir Safety Law, enacted in 1979. The Dam and Reservoir Safety Council is created by Section 236.410. Permits to build certain dams are required by Section 236.435.

Chapter 237, RSMo, (Barges, Ferries and Wharves) mostly addresses ferries.

Sections 237.010, *et seq.*, governs ferries, requiring a license and the posting of rates for ferriage. These sections all date back to the statute revision of 1909.

Section 237.400 establishes the form for an interstate compact among Iowa, Kansas, Nebraska, and Missouri for the development of the Missouri River for barge traffic. This section was enacted into law in 1983.

Title XV (Lands, Levees, Drainage, Sewers and Public Water Supply) is a major portion of the *Revised Statutes of Missouri* dealing with water and protection from water. The chapters in this title of the law are numbered from 241 through 250.

Sections 241.010 - 241.270 form what is called the Swamp and Overflowed Lands Law, a body of reclamation statutes adopted in response to an 1850 federal law, whereby federally owned swamp lands were donated to counties for the purpose of drainage and conversion from wetlands to crop lands. For the most part, it is the counties of Southeastern Missouri that have made use of the terms of these sections.

Sections 241.290 - 241.340 are termed the Islands and Abandoned Riverbeds part of the chapter, dating back to before 1909, except that some amendments, such as Section 241.291, which grants and transfers ownership of islands in the Mississippi and Missouri Rivers to the Conservation Commission, date from 1971.

Chapter 242, RSMo, in toto, and Chapter 243, RSMo, in toto, provide the procedures for forming Drainage Districts via either circuit courts (Ch. 242) or county commissions (Ch. 243). Chapter 244, RSMo, *in toto*, covers private drainage rights, and Chapter 246, RSMo, *in toto*, gives provisions that apply to all drainage and levee districts. These chapters are largely administrative and financial provisions of law. Portions of these chapters of law date to 1909, but there have been more recent amendments.

Sections 242.700 through 242.750 (Drainage Districts for Mining Purposes) provides for the specialized drainage needs of mining in wet areas (reclamation of mineralized lands). These sections were in the 1939 edition of revised statutes.

Chapter 245, RSMo, in toto, provides the procedures for forming Levee Districts, both by circuit courts and by county commissions. (Again, Chapter 246 gives administrative and financial provisions that apply to all levee and drainage districts.) Most of the sections of Chapter 245 were enacted into law before 1919.

Chapter 247, RSMo, in toto, constitutes the Public Water Supply Districts Law.

Sections 247.010 - 247.227 govern the incorporation of County Water Districts in the circuit courts.

Sections 247.230 - 247.670 govern the formation of Metropolitan Water Districts. Much of this legislation was enacted before 1939.

Section 247.670 forbids the sale of water outside the district. (Enacted, 1949.)

Chapter 248, RSMo, in toto, allows the establishment of Sanitary Drainage Districts in the circuit court by cities of more than 300,000 population, and is largely procedural. Much of this body of law dates from before 1909.

Chapter 249, RSMo, in toto, (Sewer Districts in Certain Counties) covers formation of sewer districts in St. Louis County and "other counties." Again, much of this legislation is administrative and financial.

Section 249.010, *et seq.*, authorizes the formation of what has become known as the Metropolitan St. Louis Sewer District (MSD), pursuant to Article VI, Section 30 (a) (5) of the Missouri Constitution. These provisions were law in 1939.

Chapter 250, RSMo, in toto, (Sewerage Systems and Waterworks— City or District) defines what sewerage systems are, and empowers Missouri municipalities to build and operate sewerage systems and waterworks. These provisions are largely administrative and financial. These sections were enacted into law, 1951.

Chapter 252, RSMo, in toto, creates the Mo. Dept. of Conservation and describes its duties. These mostly are fish and game laws, with Section 252.010 citing the statute as "The Wildlife and Forestry Law," some sections of which were enacted beginning about 1909, but many times revised, especially in 1945.

Section 252.045 forbids dumping on lands or in waters of the Conservation Commission. This was enacted into law, 1979, amended in 1993.

Section 252.150 requires anyone owning, operating, or using a dam to provide a fishway to allow free passage of the stream by fish, both up and down, in a manner approved by the Conservation Commission. This was enacted into law before 1909, revised and amended most recently in 1945. (See also

Section 236.230, *supra*, for a similar passage of law.)

Section 252.200 makes it a misdemeanor to obstruct the free passage of fish by a net or weir or other device. This was enacted into law before 1909, revised and amended since, most recently in 1945.

Section 252.210 makes it a misdemeanor to contaminate streams "sufficient to injure, stupefy or kill fish." This section was enacted before 1909, and most recently amended in 1945. A separate part of Chapter 252 is known as "The Missouri Economic Diversification and Afforestation Act of 1990."

Section 252.300 provides the intent of the General Assembly "to address environmental, economic and social programs with a long-term, integrated strategy that will result in soil conservation, improved water and air quality, enhanced wildlife habitat, increased job opportunities, and reduced social problems, to the benefit of all citizens..."

Section 252.303 sets up what is called an Agroforestry Program, in cooperation with the Univ. of Missouri College of Agriculture, the Extension Service, the Dept. of Natural Resources, USDA, the Missouri Dept. of Agriculture, and private industry councils. This was enacted in 1990, and amended in 1993.

Chapter 253, RSMo, in toto, (State Parks and Historic Preservation) contains numerous sections that apply to water.

Sections 253.290 through 253.320, cover the leasing of federal reservoir lands for resort facilities. These sections were enacted into law, 1959, and have been amended. Section 253.420 contains regulations governing salvage or excavation of historic shipwrecks, enacted into law, 1991, and amended, 1993.

In one of the few legislative acts of its kind, Section 253.500 makes a specific point in declaring that the Missouri General Assembly disapproves of the conveyance of Meramec Park Lake Project lands to the state (by any federal agency) under terms of (federal) P.L. 97-128, with certain exceptions. This was enacted into law in 1982.

Chapter 254, RSMo, in toto, ("The State Forestry Law") is the "other half" of Chapter 252 ("The Wildlife and Forestry Law"). The Missouri Conservation Commission is the administrator of the law. State forest land is land of the Conservation Commission, as cited in Section 252.045, *supra*. Most of this chapter was enacted into law in 1945.

Chapter 256, RSMo, in toto, (Geology, Water Resources, and Geodetic Survey) contains several water related parts.

Sections 256.200 through 256.260 give certain duties and powers to the Clean Water Commission in regard to the water resources of the state. These were enacted into law, 1961.

Sections 256.280 through 256.360 create the "Missouri Water Development Fund" and set forth the powers of the Clean Water Commission relative to the fund and its purposes. Notably, Section 256.360 directs that the Commission is to protect the public interest in federal reservoirs. These sections were enacted into law, 1965. Sections 256.400 through 256.430 (Water Usage) establishes the major water users registration program of the Department of Natural Resources, through which water use data are compiled for the purpose (stated in Section 256.405) of analysis and planning for future water management needs. These sections were enacted into law in 1983.

Sections 256.435 through 256.445 (Multipurpose Water Resource Act) establishes a Multipurpose Water Resources Program in the Department of Natural Resources for the purpose of helping with long term water storage projects in the state. These sections were enacted into law in 1992.

Sections 256.600 through 256.640 ("The Mo. Water Well Drillers' Act") was enacted into law, 1985, for the purposes of assuring that water wells are properly constructed and will produce safe supplies of water.

Sections 256.603, 256.614, 256.615, and 256.628 all discuss plugging of abandoned wells.

Sections 256.641 through 256.660 established the Southeast Mo. Regional Water District) as a public corporation in the "Bootheel" counties of Missouri. Purposes include the moni-

toring of water quality and quantity in this agricultural region of the state that uses a lot of water for irrigation. This was enacted into law, 1992.

Chapter 257, *in toto*, (Water Conservancy Districts) allows the formation of river basin conservancy districts by way of the circuit court of a county for purposes to be set forth in any petition to the court. This was enacted into law, 1959.

Chapter 258, *in toto*, (Outdoor Recreation) sets up the "State Interagency Council for Outdoor Recreation," composed of the directors of the Dept. of Agriculture, the Office of Administration, the Dept. of Social Services, the Dept. of Economic Development, the Dept. of Conservation, the Dept. of Natural Resources, MoDOT, and the University of Missouri. This council exists for the purposes of providing liaison with the federal Bureau of Outdoor Recreation, receiving and disbursing federal funds for outdoor recreation planning, and acting as a forum for discussing outdoor recreation problems. This was enacted into law, 1965.

In Chapter 259, Section 259.010, creates the "State Oil and Gas Council," enacted 1965.

Section 259.070, Powers and Duties, includes provisions such as preventing pollution of fresh water supplies by oil, gas, or highly mineralized water. Most of this part of the law was enacted in 1965.

Chapter 260, *in toto*, (Environmental Control Law) contains provisions to protect water from pollution, including the regulation of solid waste disposal, hazardous waste management, and radioactive waste management. Much of this chapter was enacted in 1972.

Section 260.095 legislates that contracts entered into may be for the purpose of preventing or reducing pollution. This section was enacted into law in 1985.

Sections 260.260–260.266 govern disposal of storage batteries.

Sections 260.270–260.276 cover disposal of waste tires.

Sections 260.300–260.345 establish solid waste management districts in the state.

Sections 260.350–260.434 cover hazardous waste management, including PCBs.

Section 260.365 creates the Hazardous Waste Commission of DNR.

Section 260.429 mandates that "In non-karst areas of the state, [DNR] shall not issue a hazardous waste facility permit for a proposed commercial hazardous waste landfill, if such landfill would be located directly over a groundwater divide." This double negative section was enacted in 1993. [Landfills in karst areas of the state are governed by the Code of State Regulations (CSR).] (See also Section 577.071, below, re. prosecution for violations of sections of this chapter.)

Section 260.700–260.735 allows Missouri to join the Midwest Interstate Low-level Radioactive Waste Compact.

Section 263.241, part of the chapter on insect pests and weeds, designates the purple loosestrife plant (a wetland plant) a noxious weed. This was enacted into law, 1989.

Chapter 278, *in toto*, (Soil Conservation) contains many sections relating to water.

Section 278.010 legislates that the State of Missouri accepts the provisions of the federal "Soil Conservation and Domestic Allotment Act of 1936" [16 U.S.C.A. 590h], which includes the purpose of "protection of rivers and harbors against the results of soil erosion in aid of maintaining the navigability of waters and water courses and in aid of flood control." This section was enacted in law, 1939.

Sections 278.060 through 278.155 are the "Soil and Water Conservation Districts Law." These sections foster the establishment of soil and water conservation districts in the counties of Missouri, making them eligible for federal assistance from the USDA. Much of this body of the law was enacted in 1943.

Sections 278.160 through 278.300 are on Watershed Protection and Flood Prevention sub-districts of Soil and Water Conservation

Districts, organized for the purposes of preventing floodwater and sediment damage, the utilization and disposal of water, for increasing recreational and industrial development, and for agricultural water management, irrigation, and drainage. Most of this body of the law was enacted in 1957.

Sections 281.005 through 281.310 govern pesticides, pesticide dealers, and pesticide applicators. Some sections of this law were enacted as early as 1955, but many sections were enacted during the 1970s, and some in the 1990s.

Sections 292.600, *et seq.*, in the chapter entitled, Health and Safety of Employees, cover Hazardous Substances in the Workplace. Pesticides are included in the definition of hazardous substances. The definitions were enacted into law in 1985.

Section 293.620 (Caves) calls for the annual inspection of commercial caves. (See also Sections 578.200 – 578.225, below, the Cave Resources Act.)

Section 304.013.2 prohibits All-Terrain Vehicles from being operated in rivers and streams. This section was enacted into law, 1988, with amendment, 1990.

Chapter 306, in toto, governs watercraft, water safety, sewage disposal from a watercraft, and the state water patrol.

Sections 306.010 through 306.080 are about registration and licensing of watercraft.

Sections 306.090 through 306.225 are on water safety.

Sections 306.250 through 306.290 regulates marine toilets and forbid discharge of sewage into the waters of the state. These last sections were enacted into law, 1963.

Sections 313.800–313.850, in the chapter on licensed gaming activities, regulates Excursion Gambling Boats. Most of these sections were enacted in 1991 and approved by public referendum in 1992. Gambling boats are supposed to be in the Missouri or Mississippi Rivers only, per Section 313.812.10, RSMo.

Sections 319.100 through 319.139 regulate Underground Storage Tanks as to registration,

standards, releases, closures, and financial responsibility. (See also parts of chapters 260 and 644 relative to hazardous waste management.) These sections of law date to 1989.

Chapters 320 (Fire Protection) and 321 (Fire Protection Districts) are Public Safety chapters. These chapters mostly detail administrative and financial procedures, rather than water use.

Section 320.273 sets up a “dry hydrant technical assistance program” in which the state fire marshal and Dept. of Conservation cooperate to promote the use of dry hydrants in rural areas of Missouri. Section 320.273.2 defines a dry hydrant.

Section 355.025 (General Not for Profit Corporation Law) sets out the purposes for non-profit corporations, including water supply facilities, and sanitary sewer collection systems and waste water treatment facilities. This section became law, 1953, and has been amended.

Chapter 386, in toto, is the Public Service Commission Law.

Sections 386.020 and 386.025 define water and sewer among several kinds of utilities. (See also Chapter 393, below, for more on the jurisdiction of the PSC.)

Section 386.250 provides the jurisdiction of the PSC over water and sewer systems. These sections were part of the statute codification of 1919, with amendments since.

Section 388.450 delineates how railroad bridges may be built over navigable streams. This was already law when the statute codification of 1909 was made.

Chapter 393 (Gas, Electric, Water, Heating and Sewer Companies) provides additional language relative to the PSC, and relative to utility companies, including the power of the commission to ascertain the valuation of property of such companies.

Sections 393.010 through 393.030 describe the powers of water and sewer companies.

Section 393.030 specifically is on taking water from a non-navigable stream, and erecting a dam for storage.

Section 393.130.5 specifically addresses fire hydrants and distribution pipes, and charges for water.

Section 393.140 gives the PSC certain governing powers, including "general supervision," ascertaining quality of service, and power to fix standards for utilities.

Section 393.292 discusses the decommissioning of nuclear power plants (that use water for steam and cooling). This last section became law in 1989, whereas most of the sections of this chapter date back to the early part of the century.

Sections 393.700 through 393.770, called the Joint Municipal Utility Commission Act, was enacted into law, 1978. This part of the law is the enabling legislation for the future formation of cooperative companies to provide utilities, in the manner of the Clarence Cannon Wholesale Water Commission, that supplies water from Mark Twain Lake.

Chapter 444, in toto, addresses the Rights and Duties of Miners and Mine Owners.

Sections 444.350 through 444.380 are the "Metallic Minerals Waste Management Act."

Section 444.375.8, particularly, protects the state's water resources from environmental harm (from heavy metal pollution). This section was enacted into law, 1989, and has been amended.

Sections 444.400 - 444.420 authorize entering the Interstate Mining Compact, enacted into law, 1991. (Compact created, 1971. Missouri was the 18th state to enter.)

Sections 444.500 through 444.755 are known as the "Strip Mine Law."

Section 444.520 is where the Land Reclamation Commission is established by law enacted in 1971.

Section 444.535 provides rules and regulations, notably relative to minimizing disturbances to the prevailing hydrologic balance at the mine site and in associated off-site areas, especially to the quality and quantity of water in surface and ground water systems, and avoiding acid drainage. This section

was enacted in 1978, amended in 1988.

Sections 444.760 through 444.790 are cited as "The Land Reclamation Act," and convey certain powers to the Land Reclamation Commission (created in Section 444.520, *supra*).

Section 444.774 gives reclamation requirements, notably relative to surface water, erosion, siltation, runoff, and impoundments. This section was enacted into law, 1971, and amended, 1990.

Sections 444.800-444.970 are cited as the "Surface Coal Mining Law," and convey certain powers to the Land Reclamation Commission (created in Section 444.520, *supra*).

Section 444.820.2 (10) and (11) set forth the information needed in an application for a permit, particularly watershed and stream information, and probable hydrologic consequences of mining.

Section 444.825 provides the contents of the reclamation plan that must be submitted, particularly relative to quantity and quality of water. These were enacted into law, 1979.

Section 444.855, relative to the granting of a mining permit, specifies performance standards to be met, especially with regard to water impoundments, quality and quantity of ground and surface waters, and drainage.

Section 444.860 specifies performance standards to be met in underground mining operations (minimize disturbance of the hydrologic balance). Both these latter sections were enacted into law, 1979.

Sections 537.345 through 537.525 concern the landowner's liability for recreational use of land (land meaning both land and water) and related matters.

Section 537.348 (3) (b) defines a swimming pool (see also Section 577.161 regarding the use of a life jacket in a swimming pool).

Section 537.410 has to do with the construction of log booms across streams and liability for backwaters or overflows caused by a boom or an accumulation of logs behind a boom. This section dates back to before 1909.

Section 569.090 (4), in the chapter on robbery, arson, and burglary, makes tampering with a water meter a crime. This was enacted into law, 1977.

Chapter 577, (Public Safety Offenses) includes several passages related to water.

Section 577.071 provides that the county prosecutor may sue for violations of Sections 260.211 and 260.212 (solid waste chapter). This was enacted into law, 1990.

Section 577.073 makes it a misdemeanor to "contaminate in any manner, any spring, pool or stream within a state park." This was enacted as Section 560.473 in 1961, and transferred to Chapter 577 in 1978.

Section 577.076 forbids dumping animal carcasses "or any other filth into any well, spring, brook, branch, creek, pond, or lake." Formerly Section 564.010, this was transferred to Chapter 577 in 1978.

Section 577.150 makes it a misdemeanor to divert, dam, or hold "back from its natural course and flow any spring, brook or other water supply" or to poison "the water of a well, spring, brook or reservoir used for domestic or municipal purposes." Formerly Section 564.020, this was transferred to Chapter 577 in 1978.

Section 577.155 prohibits the construction or use of any waste disposal well. Formerly Section 564.025, this was transferred to Chapter 577 in 1978.

Section 577.160 redefines a swimming pool (see Section 537.348 (3) (b), *supra*.)

Section 577.161 makes it a misdemeanor to not allow the use of a life jacket by a disabled person in a swimming pool. These latter two sections were enacted, 1987.

Sections 578.200 through 578.225 constitute the "Cave Resources Act." These were enacted to protect cave formations from destruction and protect cave streams from contamination in 1980. (See also Section 293.620, *supra*, inspection of caves.)

Chapter 640 contains sections of statute relative to the Department of Natural Resources, dating to the Reorganization Act of 1974.

Sections 640.100 through 640.140 are applicable to drinking water and create the Safe Drinking Water Commission in DNR, enacted in 1978 (although certain sections of this chapter date to early in the century).

Sections 640.400 through 640.435 are cited as the "Missouri Water Resource Law." These sections provide for the monitoring of surface and groundwater resources, and the development of a State Water Plan. Sections 640.418 through 640.423 provide for the establishment of special water quality protection areas. These sections were enacted into law, 1989.

Sections 640.600 through 640.620 provide for water supply and sewer grants to financially aid local districts. These sections also were enacted into law, 1989.

Sections 640.700 through 640.758, also known as the "1996 Hog Bill," governs Concentrated Animal Feeding Operations (CAFOs), designates classes of CAFOs, defines animal waste wet handling facilities, gives to DNR the authority to promulgate rules regulating Class I facilities, and providing for inspections. Discharges of animal waste are to be reported and remediated.

Chapter 643 is the Missouri Air Conservation Law.

Sections 643.010 through 643.210 create the Air Conservation Commission and provide the intent of the General Assembly that air pollution be prevented, and that Missouri be in compliance with the federal Clean Air Act. Such water-related issues as Acid Rain fall under these provisions, generally. Many of these sections were adopted in 1965, and amended since. Some sections formerly were part of Chapter 203, and transferred to Chapter 643 in 1986.

Chapter 644 is cited as the "Missouri Clean Water Law."

Sections 644.006 through 644.141 are general provisions. The Clean Water Commission was created by Section 644.021, a section enacted in 1972, although the commission dates to 1961. This was formerly numbered 204.021, and was transferred to Chapter 644 in 1986.

Sections 644.500 through 644.564, adopted under authorization of the Missouri Constitution, authorizes the issuance of Water Pollution Bonds to provide funds for the protection of the environment via control of water pollution. These sections also were enacted into law, 1972.

Section 650.005.11 creates the Missouri State Water Patrol in the Department of Public Safety as part of the Reorganization Act of 1974.

Sections 701.025 - 701.059 define and govern the operation of on-site sewage disposal systems and authorize the Department of Health to promulgate rules and regulations, including the setting of standards as set forth in Sections 701.040 and 701.043. These sections were enacted into law, 1986 and 1994.

APPENDIX 5

RECENT LEGISLATIVE ACTION

The *Revised Statutes of Missouri* (RSMo.) were most recently compiled and published in 1994. While there are annual supplements to the RSMo, the 1994 set of nine volumes is the most recent compendium, available at most libraries.

This section of *Water Law of Missouri* looks at recent legislative actions of the Missouri General Assembly concerning water and related topics. The years covered are 1995, 1996, and 1997, and to the end of the 1998 State Legislative Regular Session. Enactment of law requires not only adoption of legislation by the General Assembly, but also the signature of the Governor.

**1995 Session, Missouri General
Assembly, First Session, 88th General
Assembly
Bills enacted by the Governor's
Signature**

HB 251 – *Underground Storage Tanks (UST)*. This bill (1) amends the language governing the use of the underground storage tank insurance fund to include clean-up of sites, and (2) directs the Department of Natural Resources to use risk-based corrective standards to determine priority clean-ups of UST contamination. (Water Quality related.)

SB 123 – *Missouri-Nebraska Boundary Compact*. (Requires enactment of legislation by Nebraska, and ratification by the United States). The boundary between Missouri and Nebraska has been the Missouri

River, which has changed course, from time to time, so that there are real and potential boundary issues between the two states, with property owners needing clarification of the boundary. (Water Flow related.) (Sec. 7.002, RSMo)

SB 131 – *Water Pollution Control bond issue*. Authorizes an additional \$15,000,000 in state bonding. The Clean Water Commission, Department of Natural Resources, governs. (Water Quality related.)

HB 81 – *Solid Waste Law, re. Batteries*. Amends the Solid Waste Law to clarify provisions related to Lead-Acid Batteries, Alkaline-Manganese Batteries, Mercuric Oxide Batteries, and Button Cell Batteries. Purpose is to keep landfills clear of pollutants from used batteries by encouraging recycling. (Water Quality related.)

HB 88; SB 228; SB 229 – *Stormwater Control Districts, Water Districts, Sewer Districts, and Regional Recreational Districts*:

SB 228 allows communities impacted by the Great Flood of 1993 to qualify for more than one grant in a year; Also allows local option on a quarterly sewer maintenance tax, not to exceed \$7 per quarter (\$28 per year).

HB 88 amends the law relative to stormwater control districts, and allows creation of regional recreational districts.

SB 229 contains the wording relative to the stormwater control districts; allows all counties to be eligible (formerly only first class counties) for the 80%-state, 20%-matching stormwater grant program. Also allows the

stormwater grant funds to be used for planning, not just construction. (Water Quality.)

SB 376 – Wetlands. Rescinds the December 31, 1995, sunset provision related to the Joint Committee on Wetlands in the General Assembly.

SB 407 – (contains HB 572) Oil Spill Liability. Makes clean-up after a spill quicker by reducing liability exposure on the part of contractors. (Water Quality)

Vetoed by the Governor

SB 18; SB 421 – Planning and Zoning Districts around Lakes. This bill would have amended the County Planning and Zoning Act (Chapter 64, RSMo) relative to the establishment of a planning and zoning commission around a lake. It appears to be worded in such a way as to chiefly apply to the Lake of the Ozarks.

Died on the Calendar

SB 30 – Sinkholes. This bill would have amended Chapter 644, RSMo, to forbid channeling surface water or stormwater into a sinkhole.

Died in Committee

HB 419 – Sand and Gravel Extraction from Water Courses. This bill would have provided regulatory language in statutory form, governing the extraction of sand and gravel from rivers and streams of the state, to avoid water pollution and other hydraulic, hydrologic, and habitat problems. The wording provided that the bill would not have applied to the Mississippi, the Missouri, or the Osage River (below Bagnell Dam).

1996 Session, Missouri General Assembly, Second Session, 88th General Assembly Enacted by the Governor's Signature

HBs 1207; 1288; 1408; and 1409 – Regulation of Concentrated Animal Feeding Operations (CAFOs). Defines Class I and Class II by numbers of animal units –

IA = 7,000 or more

IB = 6,999 – 3,000

IC = 2,999 – 1,000

II = 1,000 – at least 300

Defines "sensitive areas" as "areas in the watershed located within five miles upstream of any stream or river drinking water intake structure, other than those intake structures on the Missouri and Mississippi Rivers." DNR is given authority to regulate buffer distances; does not restrict local control. Livestock markets are exempted. There are other provisions. Refer to Sections 640.700 – 640.755, RSMo. (Water Quality)

SB 708 – Petroleum Storage Tank Insurance Fund/Creation of Board of Trustees. "Petroleum storage tanks" (above or underground, used to contain petroleum) replaces "underground storage tanks" in current law. A board of trustees is established to provide oversight of the fund. (Water Quality)

HB 1260 – Drinking Water Fee Extension. Extends DNR authority through Sept. 1, 2002, for collection of fees for the Public Drinking Water Program of DEQ. (Water Supply)

Vetoed by the Governor,

HCS for SBs 757 and 538, and HB 1312 – Water Pollution Control Bonding Authority, Joint Sewer Utilities, and Stormwater allocation. Would have removed drinking water joint municipal utilities from PSC regulation. Would have authorized fifteen million dollars of water pollution control bonds for construction grants and loans programs, and provide the required state match of twenty per cent for receipt of federal dollars for the State Revolving Loan Fund.

Died on the calendar

HJR 49 – Would have redistributed Water Pollution Control Bonds for stormwater projects.

Died in committee

HB 1083 – Would have created an Office of Floodplain Management in SEMA.

HB 1085 – Would have made in-stream sand and gravel mining a misdemeanor.

HB 1613 – *Would have funded Stormwater control/local parks from the state sales tax for soil conservation and state parks.*

SB 528 – *Would have required risk benefit analysis for DNR regulations.*

SB 608 – *Would have required DNR Water Quality Certifications to be issued within 90 days of public notice.*

SB 614 – *Would have required SEMA to manage floodplain development.*

SB 833 – *Would have mandated that DNR rules be no stricter than federal regulations.*

1997 Session, Missouri General Assembly, First Session, 89th General Assembly Bills Truly Agreed to and Finally Passed

HJR 11 – *Sewer and Water Works.* A proposed constitutional amendment for bond issues to allow revenue-producing sewer works, if approved by voters; also deletes requirement for PSC regulation of joint municipal utility commissions. (See also SB 165, below.) [This bill did not require Governor's signature as it requires a referendum.]

Bills Enacted by the Governor's Signature

HB 340 – *Sewer Districts.* This bill changes the rules regarding members of governing bodies and advisory boards.

HB 379 – *Watercraft.* This bill makes several changes, including the minimum age of the operator of a watercraft (to 14), the nighttime speed limit, and obstruction of other waterborne traffic. (Water Safety)

HB 402 – *Sewage System Inspection.* This bill relates to on-site sewage disposal systems and provides for DOH inspections and fees to be paid to DOH. (Water Quality)

HB 700 – *Official State Emblems.* This bill designates the paddlefish (spoonbill) as the official state aquatic animal, and the channel catfish as the official state fish at Section 10.130 and 10.135, RSMo.

SB 29 – *Missouri-Nebraska Boundary Compact.* Extends to October, 1999, the dead-

line for both states to agree to the compact, or be void. Found at Section 7.002, RSMo.

SB 67 – *Collection of Bridge Tolls.* Enforcement rules are stipulated.

SB 175 – *Public Water Supply Districts.* A technical correction in the wording of statute. (Water Supply)

SB 176 – *Water Pollution Control Bonds.* Authorizes another \$30,000,000 pursuant to Article III, Section 37 (e) of the State Constitution. (Water Quality)

SB 342 – *Changed the name of the Water Well Drillers' Fund to the Groundwater Protection Fund.* (Water Quality)

Died on the Calendar

HB 288 – *Safe Drinking Water Act Revolving Fund.* Lack of this legislation put in jeopardy \$21.7 million in federal funding, already allocated by the federal government for Missouri's use. Missouri must file an Intended Use Plan with the U.S. EPA before June 30, 1998, in order to capture these funds. This bill died because of the addition of several amendments which delayed the bill until time for adjournment of the General Assembly. One of the most controversial amendments would have placed "no stricter than federal" language in clean water statutes.

Other Bills that Did not Pass

HB 451 – *On Flood Plain Management.*

HB 864 – *Clean Lakes Act.*

SB 167 – *On Flood Plain Management.*

SJR 2 – *DNR Fees Excluded from Definition of "Total State Revenue."*

1998 Session, Missouri General Assembly, Second Session, 89th General Assembly

Bills Truly Agreed to and Finally Passed

HB 1148 – *Petroleum Storage Tanks.* This bill makes a number of changes in existing statutes, including extending the sunset date on the Petroleum Storage Tank Insurance

Fund from December 31, 1998, to December 31, 2003.

HB 1161 – *Public Drinking Water*. A remake of HB 288, that failed of passage in 1997, enables the Safe Drinking Water Commission and the Clean Water Commission to implement a program to provide loans to community and other non-profit drinking water systems, in accordance with the federal Safe Drinking Water Act.

HB 1622 – *Public Water Districts*.

This clarifies voting for incorporation of water districts.

HB 1791 – *Mid-America Port Commission*. This bill allows Missouri to join with the states of Illinois and Iowa to form the Mid-America Port Commission, to be governed by nine members.

HB 1928 – *On-Site Sewage Disposal*. Owners of residential lots of at least ten acres are exempted from state requirements governing on-site sewage disposal.

SB 479 – *Public Water Districts; Losing Streams*. The first part of this bill is the same as HB 1622, above. The second part of the bill requires the Clean Water Commission to base determinations of what are "losing

streams" on applicable data, rather than upon presumptions, with exceptions.

SB 551 – *Public Water Supply District Elections*. County public water supply district bond elections are to be held only on dates of regular district elections, according to this bill.

SB 597 – *County Collectors*. This bill requires county collectors in non-charter first class counties to collect a one percent fee for taxes collected for drainage and levee districts.

SB 739 – *Losing Streams*. Part of this bill is the same as the second part of SB 479.

SJR 24 – *Water Pollution and Storm Water Control Bonds*. This is a proposed constitutional amendment. Among other things, it would increase the annual appropriation for rural water and sewer grants from \$25 million to \$50 million. It also authorizes indebtedness not to exceed \$100 million. Grants and loans would be administered by the Clean Water Commission. This proposed amendment also authorizes indebtedness not to exceed \$200 million for stormwater control plans and projects in first class counties and the City of St. Louis.

APPENDIX 6

CONSTITUTIONALLY VESTED AUTHORITY

THE CONSTITUTION OF THE UNITED STATES OF AMERICA

Passage related to Rivers and Waters

ART. I, Section 8. The Congress shall have power...to regulate commerce with foreign nations, and among the several states, and with the Indian tribes.

[This is called the "Interstate Commerce clause" of the Constitution. The Missouri and the Mississippi Rivers are interstate navigable waterways, and federal law governs their use.]

Passage Related to Hierarchy of Law

ART. VI, Section 2. This Constitution and the laws of the United States which shall be made in pursuance thereof, and all treaties made or which shall be made under the authority of the United States, shall be the Supreme law of the land; and the judges in every State shall be bound thereby, anything in the Constitution or laws of any State to the contrary notwithstanding.

[This is called the Supremacy Clause of the Constitution.]

AMENDMENTS TO THE UNITED STATES CONSTITUTION

AMENDMENT V. No person shall be . . . deprived of life, liberty or property without due process of law; nor shall private property be taken for public use without just compensation.

[This is called the "takings" clause of the national Constitution. Various environmental (water) laws have been questioned under this "takings" clause of the Constitution.]

THE CONSTITUTION OF THE STATE OF MISSOURI (1945)

ART. I, Section 10. Due process of law. That no person shall be deprived of life, liberty or property without due process of law.

ART. I, Section 26. Compensation for property taken by eminent domain. That private property shall not be taken or damaged for public use without just compensation.

ART. III, Section 37(b). Water pollution control fund established— bonds authorized— funds to stand appropriated. For the protection of the environment.

ART. III, Section 37(c). Additional water pollution control bonds authorized— procedure.

ART. III, Section 37(d). Third state building bond issue authorized— procedures— use of funds. For improvements of state buildings and property, including state parks (15.1%), as specified in Section 253.040, RSMo, etc.

ART. III, Section 37(e). Water pollution control, improvement of drinking water systems and stormwater control— bonds authorized, procedure. (1988)

ART. III, Section 40. Limitations on passage of local and special laws. The general assembly shall not pass any local or special law: (29) relating to ferries or bridges, except for the erection of bridges crossing streams which form the boundary between this and any other state.

ART. IV, Section 29. Highways and transportation commission— qualifications of members and employees— authority over state highways and other transportation programs. Shall have authority over all state transportation programs and facilities as provided by law, including, but not limited to, bridges, ...ports, and waterborne commerce... .

ART. IV, Section 40(a). Conservation commission, members, qualifications, terms, how appointed— duties of commission— expenses of members.

ART. IV, Section 47. Natural resources, department of— duties of department— director, how appointed.

ART. IV, Section 47(a). Sales and use tax levied for soil and water conservation and for state parks.

ART. VI, Section 26(e). Additional indebtedness of cities for municipally owned water and light plants— limitations.

ART. VI, Section 27(a). Political subdivision revenue bonds issued for utilities and airports, restrictions. Improving any of the following: (1) revenue-producing water, gas, or electric light works,

ART. VI, Section 30(a). Powers conferred with respect to intergovernmental relations— procedure for selection of board of freeholders. The people of the city of St. Louis and the people of the county of St. Louis shall have power... (4) to establish a metropolitan district or districts for the functional administration of services common to the area included therein; (Metropolitan St. Louis Sewer District established by statute under this section.)